

Petersen's Photographic Magazine

JANUARY, 1976

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STUDIO WITHOUT WALLS

Modifying Sunlight
For Sensational
Photographs

SPECIAL COLOR PRINTING SERIES BEGINS THIS ISSUE

HOW TO MAKE GREAT BLACK-AND-WHITE PRINTS FROM SLIDES

DEGENERATE ART

Unique Effects
With A Copier and
A Camera

POP SOLARIZATION

A New Look At
An Old Theme





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Nikkormat EL

It brings out the Nikon in you.

THIS ISSUE:



Page 38



Page 46



Page 78

FEATURES

- 38 Studio Without Walls**
Or windows, or floors, or doors—
by David Brooks
- 46 Black-and-White from Chromes**
The best of all worlds—by John Worst
- 52 Suzanne Camp Crosby: Ghoulish Delights**
Portfolio
- 62 Color Printing, Part I**
The Berkey Chromega system—
by Steven Rosenbaum
- 70 The "No-Lighting" Technique**
Accent the obvious—by Mike Stensvold
- 74 POP Solarization**
Mom will love it, too—by Derryl G. Berry
- 78 Degenerate Art**
Trash to treasure—by Chris Butler
- 81 Spec Sheet**
Kodak Trimlite Instamatic 48
and Rollei A110
- 83 Blueprint**
How to construct a studio flat—
by Walt Seng
- 95 1975 Yearly Index**
Collector's catalog

DEPARTMENTS

- 2 On the Scene**
New Year's
Reaffirmation
- 4 Other Voices**
- 6 Guide Lines**
Near-Waterless
Processing:
A Practical Reality
- 12 Self-Assignment**
Form, Shape and
Texture
- 16 Product Proof Sheet**
- 24 Camera on Campus**
Books to See By
- 26 Club Close-Ups**
Kodak Lights the Dark
- 28 Point Source**
Teaching an Old Dog
New Tricks
- 30 110 Photography**
A Sedic,
By Any Other Name
- 32 Focus**
Bell & Howell's
Super 8 Sound
- 34 Gallery '76**
- 36 Where the Action Is**
Photo Representation
- 86 Tokyo Notebook**
Far East Roundup
- 88 Bicentennial News**
- 98 Advertising Index**
- 100 One to One**
Why Do it the Hard
Way?

COVER

Our fresh-as-the-New-Year cover was photographed by Ken Buckner with a Mamiya C330, 180mm Mamiya/Sekor lens and Kodak Ektachrome 120 Film, 1/30 at f/8. He used one-stop overexposure and a six-foot Larson Reflector Hex to achieve the soft, ethereal quality of this photo, which is from his book *Avail-*

able Light Photography (scheduled to roll off the Petersen presses early this summer). This month's issue features two articles relevant to this subject: "Studio Without Walls" by David Brooks, beginning on page 38, and "The 'No-Lighting' Technique" by Mike Stensvold, beginning on page 70.



ON THE SCENE

THE EDITORS



BERRY



BUTLER



SENG



CROSBY



ROSENBAUM



BROOKS

NEW YEAR'S REAFFIRMATION

With this, the January, 1976 issue of PhotoGraphic, we once again take the time to reaffirm our editorial policies of the past. First, PhotoGraphic is *your* magazine. That's the way it was intended to be, right from the start. Many of the articles that appear in each issue are contributed by our readers. Once again, we reaffirm the fact that we actively solicit so-called outside contributions . . .

Additionally, PhotoGraphic's pages are available for the portfolio presentations of unknown photographers of professional caliber. If you are interested in contributing to PhotoGraphic, or if you want to have your portfolio considered for publication, we have a *Writer's & Photographer's Guide* that's yours for the asking. All you have to do is to send us your request along with a stamped, self-addressed envelope to get the information . . .

To reaffirm that PhotoGraphic's pages are open to all who have something of value to contribute, this month's issue finds us with three major contributions. The first is by **John Worst**, a Canadian with a different point of view. Mr. Worst gives us the inside scoop on how he makes outstanding black-and-white enlargements from his color slides . . . Our second contributor this month is **Derryl G. Berry**, a photographer with an updated version of the classic solarization process. Mr. Berry's approach is unique in that the end effects can be controlled, even repeated . . . The third article contribution to this issue is by **Chris Butler**, an inventive photographer who, with a photograph, a photocopier and a pocketful of dimes, has come up with a little something which he calls "Degenerate Art." . . .

Walt Seng, a contributor whose name is well-known to fans of our "Blueprint" feature, has once again come up with an inventive and original do-it-yourself idea. This month Walt outlines everything you'll need to know to build a low-cost studio flat that you'll be using for years to come . . .

For photographers who constantly complain about a lack of interesting subjects to photograph, this month's portfolio presentation by **Suzanne Camp Crosby** demonstrates what can be accomplished with an idea and some imagination . . .

Of course we have our usual complement of staffers . . . for example, beginning in this issue we present the first in a series of articles by East Coast Editor **Steve Rosenbaum** on the subject of color printing. Steve's series will not only detail the available systems but will use each article to further investigate another facet of the color printing process. Initially the series will be limited to printing from color negatives. However, if any of you have a desire for information on printing from color slides, please let us know . . .

Feature Editor **David Brooks** delves into a subject that intrigues most photographers: how to use the great outdoors as a working studio. The sun is the main light in the "Studio Without Walls," and the problem is how to modify the sunlight to obtain the desired effects . . .

Managing Editor **Karen Geller** has made things easier for us all by compiling our "Yearly Index" for 1975. In each January issue you'll find a complete index, by category, of our complete editorial content for the previous year . . .

COMING NEXT MONTH:

BUILD A DARKROOM SINK—In response to many requests, we tell you how to build an inexpensive darkroom sink.

LOWDOWN ON BACKGROUNDS—The inside information on those incredible backgrounds photographers are using.

HOW TO PHOTOGRAPH A GHOST—There are all kinds of ghosts—this article deals with one of them.

PLUS:

COLOR PRINTING—We continue the series.

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OTHER VOICES

ART APPRECIATOR

First of all, I'd like to add my name to the list of people who really appreciate your fine magazine. I am just an amateur photographer, but I've learned a great deal about the "art of photography" through PhotoGraphic.

I'd like to thank the staff for the great job they are doing and also thank the professionals who dedicate their time and knowledge to the many articles they contribute to the magazine.

I find that I'm trying out new techniques that I've never heard of before but achieving successful results by just following the clearly written articles with helpful how-to illustrations.

Once again, thanks for all the help.
Philip F. DeSiane
San Diego, California

COMPLIMENT/QUERY

I have a comment and then a question. First, Parry C. Yob's article, "Print Like A Master," in the October, 1975 issue is a superb piece. The simplicity with which he enlightened me on the art of salon printing left me bubbling with enthusiasm. Thanks to this article and your fine magazine, the salons and galleries across the country and throughout the world will have much finer prints to display.

Second, I would like a bit of information. I have been looking for the answer to this question for a long time but have been unable to find the help I needed.

I remember reading somewhere about a bleaching agent I could run my black-and-white, solarized prints through in order to get some crisp whites back into them. Do you know what this substance is or where I could locate some?

Keep up the fine work you've been doing. The photographic world owes you a debt of gratitude for your fine publication.

Mike Tourtillott
Las Cruces, New Mexico

Bathing your print (after fixing) in a highly diluted solution of potassium ferricyanide will clear up the highlights. After the ferricyanide treatment, the print should be fixed again, after which it is washed and dried as usual.—Ed.

GAF DISCUSSION

Mr. Bacon's comments on his use of GAF 500 Film at E.I. 1000 to shoot the circus (see "Other Voices," October, 1975 issue) were quite interesting. I've used the film this way, and my results are similar to his. But I think one point should be clarified. The orange overcast is not due to the forced processing: most of the artificial lights used for the circus are seen as "orange" by unfiltered daylight film.

"Pushing" GAF 500 to E.I. 1000 will have little noticeable effect on the overall color. The primary effect is a decrease in the density of the blacks, which shift from jet black at ASA 500 to very dark gray at E.I. 1000. This happens because pushing film speed is achieved by overdevelopment in the first developer. This increases the density of the negative image. When the image is reversed by subsequent exposure to light and second development in a color developer, there is less silver available for creation of the positive image. This produces a decrease in the density of all dye layers, which means that a subject underexposed by one stop will now appear correctly exposed. At the same time, there will be a loss of maximum density in the shadow areas.

At E.I. 1000 a slight loss in maximum density is not usually objectionable. Force processing of GAF 500 beyond E.I. 1000 is not recommended because further loss of dye density can produce significant loss of image quality.

Photographers who would like to experiment with pushed GAF 500 can send the film in a GAF prepaid processing mailer to the GAF Color Film Processing Laboratory, Box 910, Binghamton, New York 13902. Include \$1 in the mailer to cover the cost of special processing and a note requesting forced processing to E.I. 1000.

Those who wish to process the film themselves can use the GAF Color Slide Film Developing Outfit, which sells for \$4.40 and contains enough chemicals to process three rolls of 36-exposure GAF Color Slide film or four rolls of 20-exposure film. Extending immersion time in the first developer to 20 minutes will provide a one-stop "push."

Robb Smith, Publicist
Consumer Photo Products
GAF Corporation
New York, New York 10020

PROPORTIONAL QUESTION

Mr. Blanchard's letter in "Other Voices," September, 1975 issue on the problem of reconciling the different proportions of a 35mm negative with standard paper sizes raises an interest-

ing question. Why do manufacturers, with all the technical progress in camera and lens design, cling to an antiquated format of 24x36mm, which was introduced over half a century ago? At that time the format exactly covered the once popular postcard size of 10x15cm, and this represented about as much enlargement as the technology of the time would permit.

For many years standard paper sizes have been based on a proportion of 8x10. It seems irrational that camera manufacturers have failed to change to a format of 24x30mm, which would not only be of the same proportions but also have other advantages. For one, it would eliminate framing problems and avoid waste amounting to 16½ percent of the negative material. More compact lenses could be designed and shutter efficiency improved. It would overcome the objection that no currently available 35mm camera can produce negatives that can be enlarged without waste on standard sizes of print material.

B.E. Roebuck
Hampton, Virginia

ARTIST'S INTERPRETATION?

Steve Gall states in "Macro Photography that Sells," in the October, 1975 issue, "Your most valuable accessories will be your imagination and your intimate knowledge of the subject."

I'm afraid that imagination won over intimate knowledge in identifying the angle wing as a monarch butterfly on page 64.

In spite of this, the photographs are most refreshing.

David E. Whittingham
Albany, New York

MORE ON MIRACLES

As an addition to your recent article on Kodak-23 (see "Kodak's Miracle Developer," July, 1975 issue), I'd like to give readers a procedure for Kodak 2475 Film at E.I. 3200 that contains *real* shadow detail.

I prebathe the film in Unicolor's Plus-1 (a speed-increasing forebath used prior to development), followed by development in Kodak D-23 for nine minutes. Immediately after the D-23 development, the film is transferred to a one-percent Kodak solution (without rinsing) for four minutes. This is followed by the usual stop bath, fix and wash requirements.

Prints made on Ilford Ilfospeed No. 2 paper showed excellent shadow and highlight detail when the exposure was adjusted to give a maximum black through the unexposed film edge.

David Smith
Vancouver, Canada

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GUIDE LINES

PAUL R. FARBER

NEAR-WATERLESS PROCESSING: A PRACTICAL REALITY



□ Way back during World War II, when reconnaissance and intelligence needs called for almost immediate results in terms of usable photographs, someone devised a rapid stabilization process for both film and paper.

In practical terms, this meant the ability to produce high quality negatives and prints without the need for the traditional water washes, because much of the processing was done in the field. When the war was over, and there was no longer a need for such techniques, rapid stabilization was relegated to the archives.

Years later, the idea of waterless processing loomed attractive once again. This was particularly true of those individuals—such as news gathering agencies—who had need for immediate, expendable photographs. Stabilization processing of papers became a working reality and today enjoys a high position in the photographic community.

However, despite the high degree of acceptance that the process enjoys, most home darkrooms still rely heavily upon traditional processing techniques. Water in great quantities is required for both negatives and prints. But with water shortages becoming a day-to-day reality and with many communities already seriously affected, it seemed time to once again investigate processing techniques that required little or no water.

Although stabilization processing is rapid, it is not permanent in terms of archival needs. Stabilized prints will eventually fade. True, it may take years and years, but they will fade—with this in mind, enter the *Organized Inventors Association*. Under the guidance of Bill Seagle, a dedicated photographer, a rapid processing technique for film and paper was invented. The process does away with much of the water required by the traditional developing process, yet is permanent in terms of negatives and prints as we want them.

The ABCs of Bill's process are fascinating. Basically, he offers a kit (labeled "Pioneer Chemistry") which consists of liquid concentrates marked A, B

and C. Each concentrate is diluted to make 16 working ounces of each of the three solutions. The A solution consists of a special rapid developer; the B solution consists of a rapid fixer plus a stabilizer, and the C solution consists of a stabilizer plus conditioners.

In use, you merely load your exposed film into a developing tank. Then the film is presoaked in plain water for one minute (the water can be saved and reused). After the one-minute presoak, the water is poured out, and the A solution is poured in at room temperature



Pioneer three-step near-waterless processing chemistry can be used to develop both negatives and prints. Chemicals are reusable for up to 25 rolls of 35mm 36-exposure rolls or equivalent film area.

for exactly one minute. After one minute, the A solution is poured back into its container, and the B solution is poured in for two minutes. When the time is up, the B solution is poured back into its container, and the C solution is poured in for two minutes. After the C solution is poured back into its respective container, the tank is opened, the reel removed and the film unwound. Then a film squeegee is passed over the film to remove the excess liquid, and the film is hung up to dry, *without washing!*

The negatives produced by this five-minute process are beautiful—full emulsion speed, high acutance and rich detail in the shadows. Initially, I found the one-minute immersion in the A bath to produce a negative that's hotter (contrastier) than I like. So I cut down the immersion time to 45 seconds. If that seems a bit too fast for you to control, you can further dilute the developer to produce a working solution that requires anywhere from two to five minutes of actual processing time, which is then followed by the B and C solutions as described above. Either way, the negatives are outstanding.

All of the solutions can be reused for up to 25 rolls of 35mm film or equivalent before chemical exhaustion sets in. Processing times remain the same, with the exception of the B and C solutions, which must be increased a bit after the

tenth roll of film is processed.

After the negatives have dried, the same A, B and C solutions can be used to process one's *prints!* Resin-coated papers really take a bow here, and all you have to do after the A, B and C immersions is to squeegee off the excess C solution and allow the print to air dry.

There is another aspect to this unique, near-waterless processing technique that should be of interest to all photographers. Although the basic kit consists of the A, B and C concentrates as described, there remains another possibility: most photographers have developers they use and rely upon for negatives and prints. They may have no need or desire to begin experimenting with a new, rapid developer that works in under one minute.

Therefore, the B and C parts of the Pioneer chemistry can be readily adapted as secondary solutions to standard negative and paper developers. For example, say that you use Kodak D-76, diluted 1:1, for your standard negative developer. You would develop as usual, then follow up the development with two minutes in the B solution, two minutes in the C solution, squeegee off the excess liquid and hang to dry as usual.

What all of this means to photographers who want a darkroom, yet lack easy access to running water, or to field photographers who must see their results before returning to home base (or even to wire services, or news gathering agencies who have need for super-speed processing of black-and-white negatives and prints) should be obvious—not to mention the enormous savings to be realized in the very little need for water—the only water required in any volume would be that which is used to rinse out tanks and trays.

For the record, I ran a series of tightly controlled tests, using standard processing for the control negatives and prints. When the Pioneer-processed negatives and prints were compared to the control negatives and prints (after some severe tests which included exposure to ultraviolet radiation and high humidity), my densitometer indicated virtually no detectable differences between the control material and the Pioneer-processed material.

If you want to try this incredible new product, you can locate it in your local camera store. In case there's a lack of distribution in your area, you can order the three concentrates by sending a check or money order in the amount of \$4.95 (plus \$1 for postage and handling) to Organized Inventors Association, Photo Division, 3129 Olenda Lane, Anaheim, California 92804. If you only want the B and C concentrates, send a check or money order in the amount of \$3.50 (plus \$1 for postage and handling) to the same address. □

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a detailed explanation and point by point instruction to help you achieve improvement. You'll find that your SMP instructors will take the time to help you individually to be sure that you understand. They want *your* success!

Advance Quickly

You will begin to see your own photography improve right before your eyes. You'll begin to shoot subjects you avoided before. Your eye becomes more sure. Your touch becomes secure. The compliments of your friends increase. You're no longer fearful of results. Pretty soon you are accepting assignments for fun or payment.

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Not long ago, each of the people quoted on these pages had a dream of becoming a photographer, but each had his doubts. All had doubts about their own abilities. They doubted learning photography at home. But then something happened that convinced them of the lifelong value of learning photography through SMP.

Today, they've completed their SMP programs and each has moved ahead in a rewarding life of photography. Each has achieved an important measure of success. Each can look back with satisfaction at having taken that step of enrolling. Read why. Perhaps their experiences will dispel your doubts, and lead you to a rewarding career decision.

Builds Confidence Quickly

"I used to lack confidence in my work and was very hesitant in taking on any jobs, but now I have complete confidence that I can handle any situation that may arise. If anyone wants to truly learn photography, I would be honored to recommend your school."

Douglas J. Henry—
Mississauga, Ontario, Canada

Easy, Step-By-Step

"I think that SMP has been a wonderful learning experience for me. Most of all, I now have the confidence and knowledge to do the work."

Jordan E. Battle—
Meridian, Miss.

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"I thought the SMP course was excellent and well presented. I was most impressed with the practical assignment side of the course. I gained a lot of confidence in my ability as a photographer by proving to myself I could do it through the practical assignments."

Dan Watts—
Dallas, Texas

Quality Instruction That Produces Results

"The instructors have been extremely fair in demanding at all times a very high standard for the submitted work assignments which have made me ever so confident to take and produce any type of photography with a professional touch. Thanks a million to all at SMP—A Wonderful Organization!"

Gordon W. B. Thomas—
San Juan, Trinidad, W.I.

Helps You Make Money—Even While Learning

"I have been able to turn my newly-acquired photography skills into part-time earnings. The \$400 I made as a student went into additional equipment. I found the SMP course an excellent one. It gave me the confidence I needed in my free lance work."

Larry L. Schaffer—
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Qualifies You For Jobs—Or Your Own Business

"I now operate my own photo business and have considerable work as a free lance photographer. I do weddings, parties, banquets, real estate, copying. It goes without saying that your course has made this possible. It has given me the confidence to attempt all kinds of jobs."

Joe Abbott—
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"I feel that I have benefited from the course and have gained professionalism and self-confidence in my work."

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"I attended two photo schools and discovered SMP to be far superior in constructive criticism. The course provided the guidance to achieve quality in my photography. My earnings from free lance assignments have far surpassed the cost of the course."

Ms. Sandra D. Howie—
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SELF-ASSIGNMENT

BEN HELPRIN

FORM, SHAPE AND TEXTURE



□ Last month I discussed the quality characteristic of light. This month's subject, the directional characteristic of light, is equally important because of its effect upon the delineation of an object's form, shape and texture.

Form refers to an object's spatial three-dimensionality. Form is pictorially delineated in cubical subjects by a tonal separation of each of the subject's various planes. With spherical subjects form is delineated by a gradual change in the tonality of the curved surface.

Shape refers to an object's two-dimensional outline. Shape is delineated by a contrast between the tonality of the subject's edge contour and the tonality of the background.

Texture refers to the relative roughness of an object's surface and is delineated by the contrasting tonality of the highlight and shadow area of each surface variation.

Form, shape and texture are primary visual attributes, and the photographer must know how the light's direction will affect their delineation. Thus, this month's self-assignment:

Utilizing specific subject matter, take a series of photographs in which the direction of light is changed for each shot. Note and analyze how each directional light change affects the appearance of the subject's form, shape and texture.

ASSIGNMENT DETAILS

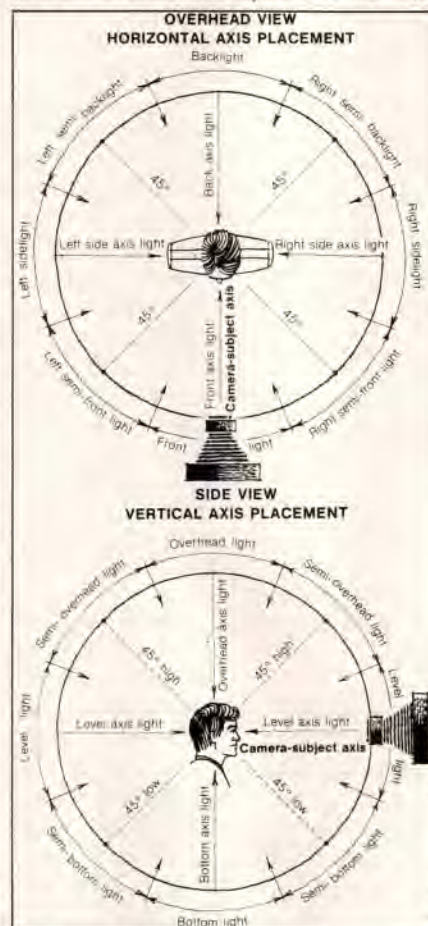
Subject matter: There are three series of photographs, and each series involves a separate subject. The subjects are a textured cube, a textured sphere and a portrait of a person. Large (six- or eight-inch size), textured, white Styrofoam cubes and spheres, available at most large variety stores or handicraft shops, make excellent subjects for this assignment.

Light source: An undiffused reflector floodlight or a diffused spotlight works best for the purposes of this assignment, but other light sources may be used.

Shooting area: A darkened room is a necessity, as all illumination, other than the light you're using, must be excluded.

Camera and film: Almost any camera can be used, but you might need a close-up "portra"-type lens attachment

to provide an adequately large image size. Positive transparency color film should be used, as it provides the best



LIGHT PLACEMENT CHART

means of later comparison and analysis. Be certain to match the film to the light source.

Camera and subject position: When photographing the cube and the sphere, position the camera 20 to 30° above the subject. The cube should be positioned so that three of its planes are visible. The portrait should be taken with the camera positioned at the subject's eye level. The subject should face the camera directly for a full-face, head-and-shoulders portrait.

Background: A white wall makes the best background, but be sure to position the subject far enough away so that, whenever possible, the wall remains unilluminated. This procedure provides the light background desired for front-axis light and the comparatively dark background desired for all other light positions. (Note: The preceding desired

background tonalities relate only to the comparative aspects of this assignment and by no means comprise a general lighting principle!)

The foregoing details should be carefully followed. Now let's discuss the actual series of photographs.

Photographing the cube: This series consists of 13 different photographs. For the first five shots position the light vertically, level with the subject (i.e., level axis light), and then take a shot with the light in each of the following horizontal axis positions: 1. front, almost on-axis light; 2. left, 45° semifront light; 3. left-side axis light; 4. left, 45° semibacklight; 5. back axis light.

For the next five shots, raise the light to a 45° semioverhead vertical axis position. Then take a shot with the light in each of the horizontal axis positions previously used for the first five shots.

The next three shots are repetitive, except that fill light should now be used with each shot. The light remains in the 45° semioverhead position, and a shot is taken with this light in each of the following horizontal axis positions: 1. left, 45° semifront light; 2. left-side axis light; 3. left, 45° semibacklight.

The fill light can be provided by a low-wattage, fully diffused floodlight or by a white poster-board reflector. Place the fill light or reflector in a vertical position that is level with the subject and in a horizontal position that causes it to lighten subject's shadow side.

The intensity of the fill light can be controlled by its distance from the subject. Measured at the subject, the intensity of the fill light should be approximately 2½ f-stops below that of the main or "key" light. This measurement indicates a 6:1 main-to-fill light ratio.

Photographing the sphere: The same series of 13 shots used for the cube are now taken, with sphere as subject.

Photographing the portrait: The series of 13 shots is again repeated using a person (i.e., a full-face, head-and-shoulders portrait) as the subject. One additional shot is to be added to this portrait series. This final shot is taken with a single light placed in front of, and well below the model's face (i.e., an almost bottom, vertical-axis position).

The assignment is now complete. If it has seemed difficult and time-consuming, I can assure you that the set of reference slides you have made are well worth the effort. Next month, we'll analyze these slides. □

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PRODUCT PROOF SHEET



PEARLCORDER-S: A LITTLE GEM

The Olympus PearlCorder-S weighs less than 12 ounces and uses a thin cassette, only 2x2½ inches, that will record or play back a full 60 minutes. Its compact size makes this tape recorder pocketable and convenient for photographers to use while making location-shooting notes. The design permits one-hand operation of all controls, and a specially designed connecting cord makes the PearlCorder-S compatible with any home hi-fi system. The built-in amplifier will power most quality hi-fi speakers directly. The basic set includes the recorder, two AA batteries, one MC-60 cassette, one E-81 earphone, one PA-1 plug adapter and instructions for \$179.95. The standard set also includes two additional cassettes, one AC-3 AC adapter and one CS-5 carrying case for \$199.95. The deluxe set adds two more batteries, one Compatac, a clip-on microphone, speaker with amplifier and telephone pickup for \$239.95. Contact Olympus Corporation of America, 2 Nevada Drive, New Hyde Park, New York 11040, for complete details.



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Arkey Model RC-814 dryer for resin-coated prints accommodates two 8x10, two 5x7, four 4x5 or one 11x14 print per load. Estimated drying time is two minutes. The forced drying is accomplished by a motorized fan pushing a tempered air stream over a heating element. A product of Arkey Corporation, 228 South First Street, Milwaukee, Wisconsin 53204, the RC-814 has a list price of \$39.95.



VIVITAR INTRODUCES 253 AUTO FLASH
Vivitar's 253 Auto electronic flash features a choice of two f-stop settings to control depth of field, an ASA 25 guide number of 35, illuminated calculator dial, a detachable 12-inch shutter cord and a two-year parts and labor warranty. Approximate flash duration is 1/1000 to 1/35,000 second, and recycle time is five seconds with fresh batteries. Technical specifications are: BCPS, manual mode—980; color temperature—5500°K.; angle of illumination—55° vertical and horizontal. Suggested list price of the Vivitar Model 253 is \$42.95. Contact Ponder & Best, Inc., 1630 Stewart Street, Santa Monica, California 90406.



REST EASY WITH SHUTTERTEST

Shuttertest is a test accessory of particular interest to photo dealers, repair labs and professional photographers. It provides an easy method of testing shutter accuracy to ±5 percent for most camera designs with exposed shutters. Simply place camera shutter on top of unit, set speed to be tested, reset meter and release shutter. Unit performs over a wide range of light levels, and a stabilization feature removes effects of weak but usable batteries. All solid-state Shuttertest Model R1, \$150 plus postage, covers 12 speeds from 1/200 to one second. Other speeds are available on special order at a slightly higher cost. Unit weighs 26 ounces, measures 3¼x5½x6¼ inches and is a product of Santa Cruz Technical Services, 830 41st Avenue, Santa Cruz, California 95062.



SUNPAK FLASH OFFERS VARIABLE-POWER CONTROL

The Sunpak Auto 311 thyristor flash utilizes a patented circuit to enable thyristor operation in both auto and manual modes. In auto mode, the Auto 311 allows a choice of two f-stops; with ASA 100 film, f/11 or f/5.6 may be used and with ASA 25 film, f/5.6 or f/2.8. At maximum aperture, correct exposure is automatically controlled from 19 inches to 14 feet; at minimum aperture, auto exposure range is 19 inches to seven feet. In manual mode, an exclusive Sunpak circuit allows a choice of full, ½, ¼, ⅛ or 1/16 power. A coaxial control dial shows the correct lens opening for all distances at every power ratio. Flash duration varies from 1/1100 to 1/50,000 second; color temperature is 5800°K. Equipped with a built-in hot shoe, PC cord and three-way adjustable vertical/horizontal mount, the Auto 311 also offers a built-in open flash button which, in conjunction with the Auto Signal Lamp, confirms correct exposure prior to actual exposure. List price is \$79.95; details may be obtained from Sunpak dealers or Berkey Marketing Co., Inc., Sunpak Division, Box 1060, Woodside, New York 11377.

(Continued on page 18)

Please mention PhotoGraphic Magazine when inquiring to manufacturers about the items listed in "Product Proof Sheet."

New product information should be sent to the attention of Karen Geller, Managing Editor, PhotoGraphic Magazine, 8490 Sunset Boulevard, Los Angeles, California 90069.

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● **The Viewfinder** The FTb's viewfinder has everything you need to stay in complete control. It shows shutter speeds, over- and under-exposure warning marks, a stopped-down metering index and meter needle and aperture indicator ring. The bright focusing screen has a microprism focusing aid, and the metering area is shaded, so you never have to guess what you're measuring.



● **Control Flexibility**
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PRODUCT PROOF SHEET

(Continued from page 16)



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(Continued on page 21)

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PETERSEN'S PHOTOGRAPHIC

PRODUCT PROOF SHEET

(Continued from page 18)



MIGHTY LIGHT—MINI-PRICE BRAUN 17B/17BC FLASH UNITS

New Braun 17B and 17BC flash units offer a guide number of 28 for ASA 25 film, as many as 200 flashes per set of AA batteries, open flash button, 60° angle of coverage, hot shoe and PC cord as well as a two-year warranty. The 17B, top, has a suggested list price of \$19.95. The 17BC, \$34.95, has the added feature of automatic operation between 3½ to 10 feet. Both are marketed by Braun North America, a division of The Gillette Co., 55 Cambridge Parkway, Cambridge, Massachusetts 02142.



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(Continued on page 23)

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- 28mm f2.8
- Fisheye
- 24mm f2.8
- 35mm f2.8



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- 100mm f2.8
- 135mm f1.8
- 135mm f2.8
- 200mm f2.8
- 200mm f4
- 300mm f4
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PRODUCT PROOF SHEET

(Continued from page 21)



THREE SEDRIC METERS DISTRIBUTED BY EPOI

All three new Sedric meters have easy-to-read calculator dials, shutter speeds of 1/100 to 30 seconds and aperture scales from f/1.4 to f/45.

Sedric P-110, above, is a reflected light, selenium cell meter with a zero setting correction and a 45° angle of acceptance. ASA range is 6-6400 and EV range 9-17 with ASA 100 film. Manufacturer's suggested retail price is \$14.95.

Sedric P-120 CdS offers the same ASA and EV ranges as the P-110 and has two sensitivity ranges for high and low readings, plus a zero setting correction, reflected light feature and battery test button. The P-120 has a 25° angle of acceptance. Suggested retail price is \$19.95.

Sedric P-130 CdS, similar to the P-120, is an incident/reflected light meter with built-in incident light dome. It has a suggested retail price of \$24.95.

Contact the Photo-Specialties Division, Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Avenue, Garden City, New York 11530, for more details.



GAF OFFERS NEW 110 CAMERAS

The GAF 130 pocket camera, top, features a prefocused, color-corrected lens with protective shield and accepts Magicube Type-X flashcubes. The complete outfit includes camera with wrist strap and three Magicubes for a suggested retail price of \$29.95.

The GAF Personal pocket camera, \$19.95, has a detachable flash unit for Magicube Type-X flashcubes which contains its own flash/shutter release. The camera itself is only 4½x1¼ inches in size.

More information is available from GAF Corporation, Consumer Photo Products, 140 W. 51st Street, New York, New York 10020.



PORTERTOWN PROCESSOR

The Portertown "Global-Goose" stabilization processor makes processing black-and-white prints quick and easy. It is supplied with solution removal drain hoses, automatic leveling sensi-matic solution valves, 7½-foot grounded AC power cord and built-in on/off motor switch. The unit produces stabilized prints in 10 to 15 seconds, accepts paper up to 11 inches in width and operates on 110/115-volt current. The compact 9¼x4x24½-inch unit fits easily on any convenient working space. The "Global-Goose" stabilization processor has a price of \$149.95 from Portertown Products, Inc., Route 1, Waterloo, Iowa 50701.



TEMPOR: AN AUDIBLE THERMOMETER

Photo-Therm has introduced a new instrument to monitor temperatures in total darkness. Temporal emits a high tone to indicate higher than desired temperatures, a low pulsing tone to indicate lower temperatures and silence if temperature is within ¼°F. of desired temperature. Its stainless steel electronic probe responds in seconds to temperature change. Unit is fully portable and may be handheld or wall mounted. Temporal has a list price of \$59.95; contact Photo-Therm, 110 Sewell Avenue, Trenton, New Jersey 08610.

(Continued on page 92)



Sigma Z

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CAMERA ON CAMPUS

ROBERT ROUTH

BOOKS TO SEE BY



□ I am convinced that to many photographers the image is a necessary nuisance! It's something that gets in the way of the beloved time/temperature ritual and invades the sanctity of the camera system. Photographers who arrive at this conclusion are victims of several or all of what I like to term "The Three Great Intimidations of Photography."

The first of these stems from the historic origins of the media itself and was perpetuated to present-day prominence. Rooted in chemistry and physics and countless experiments, early photography became a collection of technical projects performed by either amateur or professional scientists. In the jargon of the psychologist, it might be said that the very nature of photography "selected" practitioners with this special "bent" and to some extent, so it is even today. Beginners confronted with this particular interpretation as to what photography *is* are often willing conspirators, especially if this line of irrationality happens to agree with their personal philosophy of "science and the machine solve all!"

The second "Great Intimidation" is the unending drama of the camera system as revealed in magazine advertisements and displayed on velvet-cushioned camera shop counters. It just isn't fashionable to talk about the picture itself; rather it's a concentration of conversation on the tools and the mechanics of making a photograph. Oddly enough, beginning photographers, and even those who should know better, are often enticed into the giddy world of the picture puzzle, where photographic problems are solved by a bright new mechanical gadget.

The last "Great Intimidation," and the subject of last month's column, is the photography textbook. This, in my opinion, is the most tragic of all, for its potential effect is not only on the student but also on the teacher who accepts it as the message of photography. Instructors in some universities and colleges were quick to spot the weakness of textbook implications which stran-

gled, by default, the many interpretations of the image itself.

But what about those among the more than 6000 photography teachers in the lower grade levels, many of whom are dependent upon the photography textbook to complete their own educations? Small wonder that photography to many administrators and teachers is a "hobby" course, a "frill;" for that, in some schools, is what it is. I am not knocking photography as a hobby—it's a great one—but it seems to me that a photography teacher should open many doors, not just one into the game room.

At the risk of raising the hackles of many of my teacher friends, I will dare to voice my growing suspicion that photography has somewhat constricted rather than expanded their worlds. I further suggest that perhaps these basic intimidations have had a great deal to do with this "shrinkage." I propose at least a partial solution—*read!* Not just more of the same old science lessons reworded but some literary gems and not all of them about photography.

The first that comes to mind is John Szarkowski's *Looking at Photographs*, a discussion of a collection of photographs from the holdings of the Museum of Modern Art, New York City. For example, the comments on page 110 about Brassai's photograph entitled, "Dance Hall," concluded with the following observation: "The nature of the misunderstanding between the couple... is too serious and too private to speculate about. In any event, it is not important whether their relationship was personal or commercial or both. The photograph is about the bitter and desperate disappointment of private loss. Who else ever made a picture so full of wormwood?" Note, *nothing* about tools and materials—Mr. Szarkowski is talking *about* the picture.

Another book, Richard D. Zakia's *Perception and Photography*, is described on the jacket as relating "Gestalt laws of perception to photography, art and design." This book, written by one of the most prolific and knowledgeable writers in photography, is an important contribution to gaining access to the image and is certain to appeal to every photography teacher who wishes to broaden his/her understanding of the visual language.

Then there is that great classic, *Understanding Media: The Extensions of Man*, by Marshall McLuhan. Consider this statement on page 189 in the chapter entitled, "The Photograph:" "...the photograph extends and multiplies the human image to the proportions of mass-produced merchandise. The movie stars and matinee idols are put in the

public domain by photography. They become dreams that money can buy. They can be bought and hugged and thumbled more easily than prostitutes."

Ralph Hattersley's *Discover Your Self Through Photography*, is an exceptional book by an exceptional author. Read it—you might never see in quite the same way again!

Arnold Gassan's *A Chronology of Photography* is a compact exciting adventure into the history of photography with frequent informative insights into photographers and their photographs. It is, however, the touchstones in the area of criticism which flow from the introduction to the body of the book that will be of special value to the teacher—sorting and sifting into manageable groups the prominent ideas behind the works and some of their possible implications and interpretations.

Two of the more exciting books I've read are by the same author, Edward De Bono: *New Think* and *Lateral Thinking: Creativity Step by Step*. *New Think* puts it this way: "Logic isn't always the best way of thinking—not if you're after new, creative ideas—not if you're trying to break out of a trite, ordinary mold..."

John L. Ward's book, *The Criticism of Photography as Art*, contains an excellent in-depth discussion of that subject. In addition to some of the most lucid writing on the criticism of photographs as art and some penetrating analyses of the work of Jerry Uelsmann, this monograph contains a true education in the concerns of criticism.

A special favorite is *The Shape of Time: Remarks on the History of Things*, by George Kubler. Brilliantly written, with little or no fluffery, this thin paperback confronts the reader with a prodigious mind that unfolds a system of classification of art objects in a most logical and convincing manner. Here is a close look at the tools of the historian. This book will be of special interest to the teacher who wishes to gain understanding of the placement of art objects (such as some photographs) in historical significance.

And last, I highly recommend *Growing Up Absurd* by Paul Goodman. My interest in this book stemmed from the interview I had with Henry Holmes Smith (see "Camera on Campus" October, 1975 issue). To read this book is to better understand some of my concerns as an educator.

My book list is by no means complete; it could never be. I am interested in hearing from readers about their favorite books for a future article. We're all in this together; so let's share each other's learning experiences! □



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CLUB CLOSE-UPS

JOAN YARFITZ

KODAK LIGHTS THE DARK



□ Somehow, every time I get into the darkroom and close the door and realize that I'm about to take sole responsibility for some one-of-a-kind shots, something inside me quietly panics, and I forget everything I've ever learned about processing film or making prints. I find myself groping about for beakers and solutions and trays and easels and all manner of darkroom paraphernalia that I was positive I had left *right there*. They're all there, all right, but in my sudden confusion, caused by trying to be *so* careful not to forget anything or any one step necessary for producing undamaged negatives and/or prints, I've become, for all intents and purposes, a darkroom *tabula rasa*. Of course, in a few moments I've regained my composure, my mind clears and all steps are completed without further upset.

But during these momentary blank-outs, I've often thought it would be reassuring to have a calm, quiet voice telling me that there's really no reason to panic, that all is actually going quite smoothly and that if I'd just follow some simple instructions, no harm would come to my precious negatives or prints. I don't know about you, but this has been one of my recurring darkroom fantasies.

Now if your darkroom fantasies are anything like mine, which average about 10,000 to one fantasy-to-fulfillment ratio, you eventually learn to keep these types of notions to yourself. So you can imagine my elation, when at a recent photo show, I came upon a display at the Eastman Kodak booth for *Kodeword*—audio-tape cassettes which promise to talk the listener through color and black-and-white processing. Had someone at Eastman Kodak shared my fantasies? It was almost too much to believe! But rather than pursue this line of thinking, I gathered my thoughts together and asked if I could hear one or two tapes. Better yet, the Kodak rep suggested that I listen to the entire series, following the step-by-step procedures at leisure in my own darkroom.

I eagerly accepted his kind offer and made preparations for my next foray into the darkroom. This time, I took out my cassette player and decided to begin with the *Kodeword* program on black-and-white film developing and printing. I began my usual darkroom rummaging and fumbling around, but then something happened, a voice, soothing and encouraging, yet firm, told



me that *now* complicated procedures would be no problem at all if I merely listened to the step-by-step procedures which he would outline. *He* would tell me when to do what; no clock or timer would be necessary; a buzzer would sound when pouring or draining of chemicals was necessary; a bell would ring when it was time to agitate film tanks or trays. During those seemingly interminable waiting periods between steps, when the mind tends to wander, Kodak has provided catchy musical interludes guaranteed to alleviate boredom and keep attention riveted to the subject at hand.

Before I knew it, I had successfully developed two rolls of Tri-X, one roll of Plus-X and one of Panatomic-X, all calmly and painlessly. With my newfound confidence, I tackled some of those darkroom projects that I had been avoiding. I processed Ektachrome slides in E-4, color negatives in C-41 and even experimented with some color prints in rapid color processors. It was all becoming easier with each *Kodeword* cassette.

So far there are six audio-cassette programs in the *Kodeword* series. They come in a booklike package that contains the tape cassettes secured in a Styrofoam flat along with a *Kodeword* data book. The pamphlet outlines the audio material with such helpful information as: "Equipment Needed," "Mixing the Chemicals," "Amount of Solution," "Solution Temperatures," "Agita-

tion," "Time in the Processing Steps," "Drying" and "Hints and Helps." There's even a helpful discussion entitled, "Why You Are Doing What You Are Doing," which details, for example in the *How to Process Color Prints from Negatives Using Kodak Ektacolor 37 RC Paper in Kodak Ektaprint 3 Chemicals Using a Processing Tube*, the makeup of the three emulsion layers of the Ektacolor 37 RC paper. "One layer forms cyan dye, one forms yellow dye, and one forms magenta dye. Exposing and processing the paper results in three dye images, one in each layer. Together, these three images make up the image on the color print."

Also discussed in this section are the prewet cycle, what it does and why it is necessary, the function of the developer, and the working of the bleach-fix, wash and stabilizer. In addition to all of this, every discussion is accompanied by carefully drawn illustrations to guide you through the required steps and to assure that you're using the correct equipment.

Kodeword covers processing of black-and-white film and prints (No. TC-1); Ektachrome slides using process E-4—normal and push processed (No. TC-2); color prints in tubes from slides or negatives (No. TC-3); color negatives using process C-41 (No. TC-4); color prints in Kodak rapid color processors (No. TC-5), and color prints in trays (No. TC-6). The cassettes cost less than \$7 each, and until June 30, 1976, on return of owner registration card packed with each program and coupon from a *Kodeword* ad, you can take advantage of a \$1 refund offer. All programs are available at your local camera dealer.

For an investment of less than \$40 your camera club can have an easily accessible, educationally enlightening tape library, which can be augmented by member's how-to slides for a memorable program night. The cassettes can then be on hand for member's use in their own darkrooms. Beginners have the benefit of simplified instruction in the basics of black-and-white darkroom work, while advanced members can take advantage of the more technical color processing procedures. By now, *Kodeword*'s instructional and programming possibilities for your club should be obvious.

So the next time you hear a confused clatter and the groans of a befuddled darkroom worker, you'll know what to do—Kodak has finally shed the light, complete with musical accompaniment and the soothing voice of the expert. □

Camera clubs please note: "Contest News" can be found on page 91.

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I'm Mara Mehlman, photography student, majoring in Commercial/Illustration. My fellow student, Michael Zaccardi, is majoring in Industrial/Scientific. Our ultimate goal is a BA Degree in professional photography. Portraiture, Cinema and Color Technology are also available majors plus minors in Undersea Technology and Photo Journalism. Come on along and get it all together with us... you'll be glad you did!

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POINT SOURCE

STEVEN ROSENBAUM

TEACHING AN OLD DOG NEW TRICKS



□ Discuss any technique from archival processing to the Zone System with another photographer, and you'll soon find that the conversation has wound up in a hazy middle ground some-

where between fact and personal prejudice. As a beginner, it's difficult to separate the two. As you progress, it's difficult to admit that what you once believed to be a *fact* was really a matter of someone else's personal taste. Since there are few people (working pros included) who are willing to override their habits long enough to keep an open mind, the myths perpetuate themselves. One such myth/fact relationship is the one which surrounds the subject of film development.

Nowhere else in the photographic process is it as important to rely on the repeatability of your technique as it is in film development. A badly processed negative will never produce really good prints. It is possible to produce acceptable negatives using questionable techniques, although it's preferable to produce good negatives with reliable techniques. Proper agitation is important; it is most critical in the developer, yet it is necessary to continue the same kind of intermittent agitation in the other solutions as well.

Too vigorous agitation can cause the film to be pushed off the reel. When this occurs, it's possible for blotches to be produced where the film touches itself, thus preventing the solutions from coming into contact with it. The right

kind of agitation is nondirectional as well. For instance, simply lifting the tank straight up and swirling it in either a clockwise or counterclockwise direction can produce an unevenly developed negative caused by the developer passing over the emulsion from the same direction each time. This is especially critical when working with 35mm film where the sprocket holes can cause surging of the developer and localized areas of overdevelopment. The preferred technique of inversion agitation minimizes the chance of agitation patterns, since fresh solution comes into contact with the film in a more random fashion. What's of primary importance, though, is to establish a repeatable way of working that is comfortable for you, so your work will be consistent.

Stainless steel developing tanks and reels have been the traditional mainstay of the professional photographer for many years. Modern plastic equipment offers the same repeatable results as steel, often without the loading difficulty which plagues many newcomers. In addition, most of the past objections to plastic equipment are no longer valid. The *Soligor/Jobo* system, for instance, offers the capability for inversion agitation and provides adjustable plastic reels which can be reloaded and used while still wet from processing a previous batch of film. Solution requirements are conveniently embossed into the bottom of each tank, and there is a clever little plastic clamp with its own handle that snaps into place at various heights on the central core. This prevents the reels from accidentally rising above the solution level as you agitate the film.

Firmly tapping the tank against a work surface to dislodge any air bubbles which may have settled on the film is part of my routine agitation procedure. This technique has sent chills up my spine when using plastic tanks in the past. Visions of the plastic tank splitting open and ruining my film in the room light have always haunted me.



Shown in this illustration are a few of the many products which make up the Soligor/Jobo line of darkroom equipment. The system No. 2000 developing tank, right, with the hose-like Forced Turbulence Film Washer in place, will accommodate up to 12 sheets of 4x5-inch cut film, as well as all the popular roll-film sizes.

The Soligor/Jobo plastic tank has no more chance of splitting open under such circumstances than does your telephone when you slam the receiver down on an insistent solicitor. This point was clearly driven home in a demonstration given by the people from AIC Photo, Inc., the distributors of Soligor/Jobo equipment. I watched in amazement as a Jobo tank was thrown clear across the room, and I broke out into a cold sweat as it repeatedly bounced before coming to a halt. A closer look showed me that this exercise probably caused more harm to the floor and walls than it did to the tank. These tanks, incidentally, are made from the same kind of plastic as telephones and football helmets.

In addition to the two separate series of developing tanks and reels (system No. 1000 and system No. 2000), the Soligor/Jobo line of darkroom equipment and accessories includes everything from film clips to film dryers. One item that I'm particularly fond of is the *Soligor Store'N Feed Paper Safe*. If you've ever made a print with paper that has been fogged by stray light, or if you've ever had one ruined by a fingerprint developed into the image, you may appreciate the value of using this paper safe.

The primary function of a paper safe, of course, is to conveniently store your unexposed photographic paper in a lightproof chamber so that there is no need to unwrap and rewrap all the paper in its original wrapping each time you need a single sheet. That sort of constant handling can cause fingerprints or broken or bent corners. Of course, if you haven't rewrapped it well, all of the paper can be ruined when you turn the room lights on. The *Soligor Store'N Feed Paper Safe* does more than just provide a lightproof storage chamber; when the spring-operated hinged door is pulled down to open the safe, a single sheet of 8x10-inch paper is automatically passed forward from the top of the stack. Loading the paper into the safe is a simple procedure, and each modular unit contains two lightproof chambers so that two different kinds of paper can be at your fingertips at one time. These units are designed to stack with one another so that you can add as many as you need.

If any of the techniques or products I have mentioned are a surprise to you, perhaps now's the time to reevaluate some of your long-standing work habits. No *one* way of working is right for everybody. Even if you finally decide that your own way is the best way, it's a good idea to occasionally look at what you are doing, so you can make wise decisions based on your knowledge of the alternatives and your needs. □



The Bigmouth developing tank. One of the new Vivitar darkroom accessories.

How many times have you poured chemicals into a developing tank and ended up with more on your pants than in the tank? Why? Because the wretched mouth of the tank was too small to catch the amount of liquid you were pouring. SOLUTION: Developing tanks with big mouths. Naturally, we call them BIGMOUTH.

You have a batch of rolls and now you're going to develop them all at once. But when you start loading the second roll on the wet plastic reel things get sticky. SOLUTION: Design a plastic reel with little nubs to break the surface tension so you really can load it wet.

Then you put a print in the developing tray. Or is that the fixer? Of course, they get mixed up because they look alike in the darkroom. SOLUTION: Color code the trays so you can tell the

difference even under a safelight. Also color code the print tongs so they contrast with the trays.

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A new line of darkroom accessories by
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110 PHOTOGRAPHY

KALTON C. LAHUE

A SEDIC, BY ANY OTHER NAME



□ As an avid sometime reader of the leading consumer publications over the years, I've frequently been at odds with them about their photo equipment reports, as they often seem

to get in over their heads, like the *faux pas* on the Rollei 4x4 which led to its untimely demise some years back. But for the most part, I'll have to agree that they've done a reasonably good job, even when I didn't agree with their "Best Buy" choice. But there are two important things they don't tell you—one they admit is a problem, and the other, for some reason, they simply ignore (or do they know?).

The problem is a test product's life-span. Their reasoning is that there's just not enough time to determine it and still get out a report while it's useful. The other, and my soapbox topic for the month, is why they don't tell us when two products are made by the same manufacturer and have only cosmetic differences. 110 cameras are certainly prime examples. Few people realize that a large majority of non-Kodak 110 cameras spew forth from one manufacturer whose trade name (Sedic) is almost totally unknown to Americans. We'll take a closer look at Sedic's magic mini-churner in the future, but for now let's examine some of the many Sedic products and their over-the-counter labels.

Despite the persistent rumors you've heard, Kodak does *not* make cameras or package film for others, but it does license others to make cameras using certain Kodak design patents and features. When the 110 format was announced, Sedic was among the first to take the gamble and tool up, perhaps because Mr. I. Watabe, Sedic's director of export sales, had lived in the U.S. for quite awhile and knew the American market. As a result, this small Japanese company jumped so far ahead of the industry that both GAF and Argus figured Sedic as their best and fastest way to get on the gravy train Kodak always seems to provide. And so both

companies announced and made token deliveries of 110 cameras by Christmas 1972, a scant eight or nine months after 110 was born.

As if being the first was not enough for Sedic's marketing boys, they must have beaten a path to every other manufacturer's door, but for whatever reason, lots of people picked the firm to blaze the trail for their marques too—Yashica, Hanimex, Asanuma and EPOI, to name a few. True, the cameras don't all look exactly alike, but under the skin there nestles the firm beat of a Sedic heart. Now, aside from quick

(managing director of Hanimex) prediction that Hanimex will soon become one of the major suppliers of 110 cameras in the world remains to be seen.

How good are the Sedic cameras? Well, let's take the newly announced Asanuma line as a representative example. I ran all four models through comprehensive field tests at the end of 1974 and was well-satisfied with the results. The top-of-the-line Pocket 500 is equipped with the f/5.6 triplet, a 10 to 1/400-second electronic shutter and comes with a hot-shoe electronic flash unit. The 400 uses the f/8 triplet with



Smartly styled, the four Asanuma 110 models are worthy of consideration if you're in the market for a pocket camera. The Pocket 500 (center) comes complete with slip-on EF.

marketing opportunities, why would a major company pick a smaller one rather than develop their own camera? In this case, I suspect the answer was probably that other development programs were more important, but there's another equally good reason—a reduced risk in money and management decisions by letting "George" do it." By the time the major Japanese firms decided to market pocket cameras, they had very little to risk, since 110's popularity was already guaranteed. By letting someone else build the first basic models, the others bought time—time to develop new and different 110s to face the Kodak models, which have sold well over a million units in Japan since their introduction three years ago, with sales still continuing to run at about 40,000 a month.

Hanimex now has exclusive distribution rights for all Sedic-manufactured 110 cameras (except for specified Sedic customers) and has developed new products jointly with Sedic, financing and distributing them under the Hanimex name. Whether or not the new arrangement will fulfill Jack Hannes'

shutter speeds of 10 to 1/250, while the 200 and 100 are both equipped with an f/9.5 triplet and two-speed (1/40-1/100) mechanical shutter.

If you're in the market for your first 110 camera, these (like the Hanimex line discussed in an earlier column) offer good value for the money and are worthy of consideration, especially the 500. I prefer the Hanimex locking flash to the Asanuma slip-on unit, but the latter does have the advantage of accepting *any* hot-shoe flash, letting you blast more light over a greater distance than the recommended 10-12 feet.

Because of the common origin of so many of the Japanese 110 cameras, I can only suggest that you buy according to price and service you can expect from your dealer. Although many claim to repair a faulty camera, I know of no company that actually does—they all replace it with a new camera should a malfunction occur during the warranty period. So when you go shopping, sharpen your pencil and compare, unless it's the cosmetics that are all-important to you. After all, it's probably a Sedic by any other name. □

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BELL & HOWELL'S SUPER 8 SOUND



□ Since the advent of Kodak's super 8 sound cartridges, which feature a magnetic sound stripe coated directly on the film for sync-sound filming, amateurs have virtually abandoned the double-system method of recording sound and pictures. Although it's less versatile than double-system, the single-system mode is much more simple and convenient, and the quality of the sound is certainly adequate for most home moviemaking.

The new super 8 sound cameras are very similar in design and are competitively priced to suit the budgets of most home moviemakers, but it's a good idea to check out the features of all the new models before deciding which one to buy, since differences which may seem subtle when you first look at the equipment on your dealer's shelf can be much more apparent once you get the camera home and begin filming. In the next few months, I'll test several of the new sound-on-film cameras, noting their differences and similarities, in what I hope will be a useful consumer-advocate-type series of columns.

Like its sound-on-film cousins, the Bell & Howell 1235 Filmosonic XL is a fairly simple camera made for amateurs who need a good piece of equipment for making sync-sound movies. Like similar cameras on the market, the 1235 Filmosonic's two most outstanding features are its single-system sound operation and its low-light capacity.

Unlike many other super 8 sound cameras, including Bell & Howell's Filmosonic 1230, the simpler version of the 1235, the camera also includes a power and manual zoom, a contrast control switch for plus or minus one f-stop front and backlight compensation, an earphone sound monitor and a little red cue light in front to let your subjects know when the camera is in operation.

Standard features on the Filmosonic 1235 such as the f/1.3, 8.5 to 24mm zoom lens, reflex through-the-lens viewfinder, pistol grip, external electric-eye system and the unique Focus-Matic rangefinder can also be found on the earlier 1230 model camera.

The Focus-Matic distance measuring system is Bell & Howell's answer to the problem of maintaining sharp focus under low-light conditions, where large apertures needed to record an image limit depth of field and make proper focusing crucial. The Focus-Matic is technically simple and, therefore, lower in cost than most conventional focusing systems. To set the focus, you simply



The Bell & Howell 1235 Filmosonic SL super 8 sound camera comes with omni-directional microphone and earphone sound monitor.

aim the camera downward until a horizontal line in the viewfinder is aligned with the base or the feet of your subject. Then press a button on the side of the camera, read the adjacent distance scale and adjust the lens as indicated. The slight disadvantage of the Focus-Matic is that it takes a bit longer to focus—you check the rangefinder, read the scale and set the lens, while on most cameras you simply adjust the lens until the rangefinder lets you know it's okay to shoot. But the operation only takes a couple of seconds, and it isn't hard to get used to. The advantage of the Focus-Matic is that it eliminates the need to squint to make out dim numerals in the viewfinder when there's not much light.

Although the camera is noisy enough to drive a sound engineer up a wall, most people probably won't even notice the slight whirring sound the camera makes while filming. Volume can be adjusted with an automatic gain control (AGC), and if you push the trigger in partway to the test position, you can monitor the sound before you shoot. The viewfinder has a built-in exposure indicator to signal when there's not enough light, a flickering sound indicator light to show that the microphone is working and filter position indicators to show whether the filter is in place (for outdoor movies) or removed (for indoor

movies with artificial lighting). Background noises can be made less obtrusive by adjusting microphone sensitivity with a switch on the side of the camera body. The microphone does not have a remote on/off switch to enable you or your subject to operate the camera from the other side of the room, but that's not too bothersome—you can use those extra few seconds of blank space during editing.

Other characteristics which need to be mentioned include an external power jack that permits operation by AC current—a feature I would have liked to have had on the super 8 camera I was using to film my cat giving birth when the batteries ran out at two in the morning. Silent filming is possible with a conventional film cartridge, or you can remove the microphone to film with a single-system sound cartridge, then record a soundtrack later with a sound projector. The single running speed of 18 frames per second leaves the more professional 24 fps to be desired by many.

The lens is capable of focusing from four feet—a nice feature, given the fact that most XL cameras focus from six or eight feet. The microphone is omnidirectional, with a 20-foot cord. A run/lock button enables you to put the camera on a tripod and get into the movie yourself. The manual zoom is very light and operates smoothly. There are a footage counter and a battery test meter and indicator.

The above features combine to make the 1235 Filmosonic XL a fine camera for home moviemaking. It's lightweight, easy-to-operate and definitely recommended for documenting important occasions for friends and family. Suggested list price for the camera is \$389.95. This price includes camera, microphone with wind screen and earphone monitor. Available from Bell & Howell/Mamiya Company, 2201 Howard Street, Evanston, Illinois 60202.

AFI GUIDE

PhotoGraphic receives many queries about schools offering film and video curricula. The most comprehensive source of information I've found in this area is *The American Film Institute Guide to College Courses in Film and Television*. The fifth edition of this volume lists 791 institutions offering a total of 8225 courses. The *Guide* lists schools by state and includes course titles, information on scholarships and special programs, the aims of each program, names of faculty and equipment and facilities available. The *Guide* is available for \$6.95 from the American Film Institute, Membership Department, Kennedy Center for the Performing Arts, Washington, D.C. 20566. □

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The New Rollei



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GALLERY '76

□ The photographs on these pages were taken by photographers of professional caliber. In order to provide these talented individuals with a forum for displaying their best efforts, we present this month's Gallery '76. If you feel your photographs are of similar caliber, send us the evidence (along with a stamped, self-addressed return mailer—in case we don't agree). There is no limit to the size or number of photographs you may submit to Gallery '76, but only black-and-white prints will be accepted. Your name and address and all pertinent data: camera make, lens, film, exposure, special printing techniques, etc., must be printed on the back of each picture. Also, in any photograph in which a person or persons can be identified, the photograph must be accompanied by a signed release from each recognizable individual. PhotoGraphic will pay \$25 for each picture published. Prints are accepted for one-time use and will be returned after publication. □

1. The massive curved archways of a Portuguese castle caught the attention of Bronson Rogers, who positioned himself beneath one portal to emphasize the repeating shapes. Photo made with Canon FTb, Canon 50mm lens with yellow filter and Kodak Plus-X Film, 1/60 at f/8.

2. Strong backlighting enabled JoAnna Cucinotta to capture the motion of this frenzied fiddler more effectively. She photographed the musician with a Nikon F2, 50mm Nikkor lens and Kodak Tri-X Film rated at E.I. 800, exposed for 1/60 at f/1.4.

3. Ronald Berkenblitt chose a low camera angle and extremely wide-angle lens to create this gargantuan rendition of one of the contenders in a California air race. Camera was Nikon F2 with 16mm Sigma fisheye lens and Ilford HP4 Film rated at E.I. 800, exposed for 1/1000 at f/16.

4. A gaggle of geese and ducks made an interesting composition for Jay Lurie, who photographed them at feeding time one morning with his Nikonmat FTN, 28mm Nikkor lens and Tri-X film rated at E.I. 200, exposed for 1/30 at f/8.

5. Careful cropping enhances this portrait taken by John Minter, who used a texture screen to obtain subtle pen-and-ink effect. Subject was photographed with a Nikon F2, 50mm Nikkor lens and Plus-X film exposed for 1/250 at f/16; negative printed on Agfa 119 No. 5 paper.

WHERE THE ACTION IS

DAVID SUTTON

PHOTO REPRESENTATION



□ Several years ago I devoted a column to the subject of photo representation, during which time I discussed the advantages and disadvantages of having a picture agent. In the interim,

new generations of readers have joined the fold at PhotoGraphic, many of whom have written indicating strong desires to pursue careers in the field of magazine photography and, interestingly enough, they all echo the age-old query, *do they need an agent?*

The answer to this question is best determined by your output as a would-be contributor. In other words, if you are really serious about having your work published, if you plan to produce a quantity of editorial material on a regular basis in the hope of becoming an accredited magazine photographer and eventually a photojournalist, the answer is *yes!* I'll qualify that briefly by stating that a picture agent affords the fastest means of getting your work shown around to the most receptive markets; therefore, at the outset you might almost consider one a necessity if you, as a beginner, wish to crack through the editorial curtain. On the other hand, if you are simply interested in having some of your prized photographs published occasionally and do not expect to produce vast quantities of editorial material, then the answer would be *no*, since it would be a waste of time for both you and your agent. If you just want to sell a few photos, you would be best disposed to deal directly with the magazines most likely to be receptive to your work.

Since the decision of whether or not to seek out some form of photo representation is not to be taken lightly, I feel that the occasion warrants repeating some of the comments I made in the past concerning picture agents, emphasizing how they might be of help to those who are editorially inclined.

Photo agents, also known as "picture agents" or "syndicates," offer the quickest channel for getting your material circulated and published. Most of them are based in New York City, the publishing mecca where most editorial offices are located.

Close proximity makes it relatively

easy for an agent to deliver a set of pictures to a nearby magazine to discuss the merits of publishing your work. If your layout doesn't fit the editor's



I make many direct sales of my own material such as this photo of Paul Newman. I get additional sales mileage via the efforts of my "syndicate" who represents me here as well as abroad. For the would-be contributor some form of representation is a must! © David Sutton

needs, yet he is impressed with your material and potential, an enterprising and creative agent will generally seize the opportunity to suggest you for an upcoming assignment. Failing that, the agent simply makes the rounds of other magazines. Within a week or two he can cover a much broader market than you can, and in the meantime your work is being shown around, evaluated and perhaps remembered.

The agent acts as your direct link to the editor. He's a salesman who might hard or soft sell your material and photographic potential as the situation requires. While offering an editor first crack at your work, he can also imply selling it to a rival magazine. He can offer you a means of improving your journalistic concepts by providing a steady stream of constructive criticism based on his knowledge and experience of what the magazines need today, next week or next month. Being in the center of publishing activity enables an

agent to keep his finger on the editorial pulse, imparting that information to you on a regular basis—suggesting story ideas, subject matter, situations, events and personalities that he feels will be salable.

Since he is located in the target area where thousands of photographs are purchased daily and hundreds of assignments are handed out, he can save you considerable time, effort and expense while serving as your traveling salesman and representative. This is, of course, assuming that you are prepared to provide a steady supply of material month in and month out so that the agent is able to build up a large file of your work. In this way your photos can be made immediately available to editors who may be in a rush for particular material. At the same time your agent can submit and offer your photographs to many markets you didn't even know existed.

Also consider that new markets spring up week in and week out, and agents know about them long before they hit the newsstands. Also, numerous changes take place in editorial staffs, and agents waste no time in meeting with new personnel, discovering their editorial views and photo preferences. By being in a position to stay on top of things, they are able to pass along vital, timely information to you and the other photographers they represent.

If an agent becomes impressed with your work and sincerely feels that you have the potential to produce salable material with a degree of regularity, you can rest assured that he will make every effort to attract attention to your work. A salable photographer is a god-send to an agent, considering that he will extract upwards of 40 or 50 percent of a given sale or resale. While this may appear to be a staggering and disproportionate commission, as a beginner you don't have much choice but to adopt the view that half the take is better than no sale at all.

In time, as your reputation develops and the demand for your work increases, you can possibly renegotiate more favorable percentage arrangements, or you might decide to strike out on your own by submitting directly. In either event, just bear in mind that while you may be paying a heavy price for good representation, you will also be gaining considerable experience and exposure which might otherwise take several years to acquire. □

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STUDIO WITHOUT WALLS

Modify Sunlight for
Masterful Results

By David Brooks







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STUDIO WITHOUT WALLS

One does not have to be a long-time photo enthusiast to recognize and appreciate the special images created by artists like Irving Penn, Richard Avedon, Bert Stern and Francesco Scavullo. Too often, thinking of such names gives us not only a feeling of admiration for superb photographic craftsmanship but also a sense of frustration. One is soon aware that these masters of technique are also masters of large, extensively equipped studios. And, alas, just to equip oneself with a contemporary camera and accessories today is a major financial commitment.

Fortunately for the enthusiast, there is a way to control the main photographic ingredient—light—as effectively as any of the masters of the studio. And the cheapest and most abundant light source is the sun. Sunlight presents problems, however; its unbridled glare must be avoided to capture the subtleties of a delicate subject, and great pains must be taken to find a setting that affords both flattering light and a compatible background.

One solution to the problem is provided by Leon Kenamer and Rocky Gunn, who teach a technique of *subtractive lighting* for outdoor portraiture. Subtractive lighting is particularly suited to the characteristics of negative color films and the printing materials used extensively in the portrait industry. Subtractive lighting, however, has

some inherent limitations. Even with E.I. 100 with most color negative films, wide-open apertures and slow shutter speeds are the rule rather than the exception. Thus, the technique has doubtful value to the photographer who prefers the slower speed color slide films such as Kodak Kodachrome 25.

The fact that there hasn't been much exploration into the use of the subtractive technique to create other than essentially low-key styled portraits is another limitation. How the subtractive lighting style would work with still lifes, products or glassware is still largely questionable.

The alternative may be a technique that is both subtractive and additive at the same time, an apparent contradiction but a practical method of working to modify natural sunlight to effect the same level of control one would have in a fully equipped studio.

EQUIPMENT

In addition to some open space (your own backyard or the flat roof of an apartment building) and the good fortune of a calm, sunny day, you'll need some bits and pieces which can be made with ease or acquired at modest cost. Specifically, you'll need a solidly framed diffusion screen large enough to shadow your subject, at least one reflector to redirect sunlight onto the subject and stands to support these devices.

If spending money is a better choice than broken knuckles and hammered thumbs, then Larson Enterprises (18170 Euclid Street, Fountain Valley, California 92708) offers square and rectangular Reflectasols with appropriate covers that will function as either diffusion screens or reflectors when set in flat position. At least two Reflectasols would be required, one with a translucent cover and one with a silver or white reflecting cover. Sizes from 3x6-foot rectangular models and 42-inch square models down to 20-inch squares are available. If you photograph only very small subjects, the smaller sizes are more portable and easier to manipulate, but if you photograph a variety of subjects, then the larger sizes should be your first choice.

Stands to support these units should be sturdy. Larson Enterprises can also supply stands with the rugged, heavy characteristics needed. You'll also need sandbags to secure the tripod bases if you'll be working in a windy area. The heavy cotton cash bags used by banks, filled with pea gravel, work extremely well.

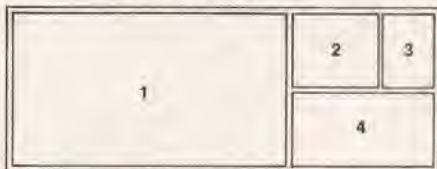
For the "do-it-yourselfer" the choice of approach is limited only by a lack of ingenuity or ambition. In addition to the special diffusing materials like Translun from the B-D Company (P.O. Box 3057, Erie, Pennsylvania 16512) and Visaflex from Studio Specialties (1623 Palo Alto Street, Los Angeles, California 90026) there are many varieties of nylon and spun glass curtain material, heavyweight Mylar drafting film and acrylic diffusion sheets for ceiling lights from which to choose.

Frames to support the diffusion materials can be constructed simply from wood, electrical and aluminum conduit, aluminum dowelling and extruded angle material. If portability isn't a factor, even the stands can be homemade—try welding a length of water pipe to an old steel automobile wheel.

The diffusion materials can be attached to the metal frames with either industrial grade tape or adhesive and to wood frames with a staple gun, tape or glue. A means of attaching the diffuser frame to the stand may present more of a challenge. You may want to take advantage of the special clamps available from Bogen Photo Corporation (100 South Van Brunt Street, Englewood, New Jersey 07631) or Braun North America (55 Cambridge Parkway, Cambridge, Massachusetts 02142), or the clamp units supplied with Reflectasols can be purchased separately.

Reflectors can be made easily from a large variety of materials. No work at all is required to obtain an efficient reflecting surface if you choose a sheet of aluminum embossed with a pattern or a piece of white Foam-Core. Even a piece of heavyweight illustration board will work. Any rigid, flat material such as plywood, Masonite, fiberboard or heavy corrugated pasteboard will support any number of reflecting materials, including silver or gold gift-wrapping paper, crumpled aluminum foil, white paper, or white, gold, copper or aluminum paint, just to suggest a few. Paper or foil materials can be attached easily with contact cement and secured at the edges with duct tape.

Again, attaching the reflector support to a stand is the nastiest problem to solve. The least expensive method may be to glue a small block of 2x4 lumber to the back of the reflector. Then weld an inexpensive vise-grip pliers to a "C" clamp. To make the attachment complete, fasten the vise-grip pliers to the stand and the "C" clamp to the wood block at the back of the reflector support.



1. My stylist Michol Farrell supplied and arranged this set of diverse stemware. Choice of glasses created a provocative challenge to light and exposure, for it involved both delicate tones in clear glass and dark bold reds that required a transparent rendition. Photo was made with a Zenza Bronica EC/TL with 100mm f/2.8 Zenzanon lens using Kodak Ektachrome-X 120 Film. Camera's meter was used to determine exposure by moving the camera in close to eliminate the false reading that would be caused by bright background if taken from farther back.

2. A Harrison No. 5 diffusion filter added to the soft glow of light on subject from one diffuser. Ektachrome-X film was exposed in a Zenza Bronica EC/TL with 100mm f/2.8 Zenzanon lens. Exposure was determined by camera's meter with the shutter set on automatic.

3. This picture, with its appearance of "natural" window light, was made on Kodak Kodachrome 25 Film with a Canon F-1 and Canon 24mm f/2.8 wide-angle lens. Flared effect of light coming through window was caused by a Harrison No. 5 regular fog filter. Exposure setting was based on reading from Minolta Incident light meter.

4. This low-key still life, also arranged by stylist Michol Farrell, was photographed with a Mamiya M645 with Mamiya 80mm f/2.8 lens. Kodak Ektachrome-X Film was exposed according to a reading from Minolta Incident-light meter.



Elliott Erwitt is not verbose. The same economy and precision he brings to his photography is present in everything he says. He pares things down to essentials, and in doing so, avoids belaboring either himself or his work with pretense.

When asked why he uses the Canon F-1 system, he replied: "I'd be better telling you that if I didn't like it, I wouldn't use it." Coming from Erwitt, this is high praise.

All of his commercial 35mm work is done with the F-1 system. It is work that is done so carefully and with such mastery of technique that technique itself is transcended, leaving only style and content apparent.

For him, the F-1 is strictly a tripod camera, and he uses it with the same deliberate planning as he uses a view camera. He particularly likes the metering system. "I sometimes double check it against my hand-held meter. If there's a discrepancy, I go with the F-1's reading."

The reason for the F-1's metering precision lies in the design of its metering system. Each focusing screen incorporates a semi-transparent mirror which deflects 15% of the incoming light into its CdS meter cell, located just below the viewfinder eyepiece.

The area metered is 12% of the viewfinder area, in the center of the focusing screen. It is slightly shaded, so that any portion of the scene can be metered precisely and accurately every time. Since its coverage is so exact, it can even be used to integrate readings by including areas of different

*Elliott Erwitt
and
the Canon F-1*



brightness into the shaded portion of the screen. Because the metering system is built into the camera, it is usable with the Speed Finder, Servo

EE Finder and Booster T Finder as well as the standard pentaprism.

Part of his versatility lies in his ability to refrain from approaching any assignment with pre-conceived ideas.

He likes to have each assignment suggest its own structure. "That's why I carry the whole outfit. To be prepared for anything. Some trips have no conclusion—I just keep traveling from one job to another. With the F-1 system, I can carry the entire studio with me, so to speak."

There are two Elliott Erwitts, photographically. One shoots his subjects as they are. What humor is in these photographs comes from the subjects themselves. The other Elliott Erwitt is capable of bringing together diverse elements into situations which are created solely for his camera and his client.

Between these two extremes lies one of the most successful careers in photography. He has done assignments for almost every major magazine in the world, and has photographed ad campaigns and annual reports for an enormous variety of clients. He has been President of Magnum, and still serves as an example of the high photographic ideals for which that organization stands.

Erwitt shows a marked lack of reverence for the cult of photographic technique. To him, "Photography is both my profession and my hobby—but it uses the same tools. I've had to use everything. What I use most now is the Canon equipment." Like any craftsman, to Erwitt the craft comes first, then the tools. But they must be fine tools.

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STUDIO WITHOUT WALLS

LIGHTING TECHNIQUES

If you remember the photographs of the master craftsmen whose work inspired us to attempt to manipulate sunlight, a basic principle becomes evident. *Simplicity* is the key to applying light to a subject in a flattering, provocative manner. This is not to say that the inclusion of subtle accents is forbidden. Remember, the way light naturally occurs is a proper model of how to modify its application to a photographic subject. Several subtle, secondary sources of reflected light are often seen accenting the primary source, delineating form and enhancing interest in otherwise unnoticed facets of the subject.

To begin with, become familiar with your subject by studying its shape and texture and observing how light reveals its features. Then choose a place to work that is free from strong reflecting sources, such as brightly colored walls, and will also allow plenty of freedom to move your diffuser and reflector to use the sun's light most effectively.

Start by shading the subject with the diffuser. You will notice that the subject is still lit by the sun, but the light is much softer now and subtly delineates form. A reflector from the opposite side will introduce a second source to either take over as the main light, defining the basic features—if an efficient surface such as bright silver is used—or merely act as a fill—if a soft white material is used. By moving diffuser and/or reflector in relation to each other and the subject, you will notice that an almost infinite variety of modelings of the subject's features can be achieved.

Virtually every basic variation of standard portrait lighting technique is possible by manipulating the relationship of the three elements—diffuser, reflector and subject. By introducing a small reflector from behind the subject, a classic hairlight effect can be achieved. Additional fills and accents can be added to bring out desired features. Just keep things simple while you are acquiring experience, so you will be able to predict clearly the effects of more complex lighting further along.

The choice of backgrounds depends on what you have available, but the rule of simplicity should continue to prevail. Natural effects can be achieved by including shrubs, trees, a portion of an exterior wall or a doorway. If the background seems too



ABOVE: A. 20-inch square Reflectasol umbrella with translucent cover; B. 3x4-foot diffuser framed with double 1x2 lumber; C. 20-inch square Reflectasol umbrella with super-silver cover; D. 36-inch square Reflectasol umbrella with soft white cover; E. 18x24x $\frac{1}{4}$ -inch plywood reflector board covered with copper-coated Mylar; F. 4x5-foot diffuser constructed of one-inch aluminum tubing with flattened ends pop-riveted together. The diffusion material is secured to the frame with three-inch cellophane tape; G. 16x20x $\frac{1}{4}$ -inch plywood reflector board covered with embossed aluminum foil material; H. 30-inch round diffuser made from $\frac{1}{8}$ -inch aluminum rod; diffusion material secured with cellophane tape.

busy, keep your subject a good distance from it and choose a large lens aperture so that the background will remain out of focus, softening the distracting details. And pay careful attention to the light level! If the background is in full sunlight, it will be overexposed in relation to the subject. If the background is in shade, then its exposure level will be equal to or lower than that of the subject, and it will appear in the same range of tones as the subject or maybe even darker.

Artificial backgrounds can be introduced to give even more of an indoor studio feeling. A white wall in full sunlight will completely wash-out, making possible a high-key effect. The diffuser will function both to shade the subject from direct sunlight (when positioned behind the subject) and as a background. Color can be added by stretching colored cellophane across the back of the diffuser, making the background seem almost luminescent.

SPECIAL APPLICATION AND CHALLENGES

The techniques of manipulating sunlight to achieve the same degree of control as possible in a well-equipped studio are not limited to portrait subjects, nor are they restricted to outdoor locations. Cold, wintry weather may preclude working outside; go indoors then, taking the same equipment with you and redirect the light of the sun coming in through the windows.

If sunlight is falling on the window, diffusion materials can be placed over

the window's exterior to soften and disperse the illumination. A reflector positioned outside can direct a beam of sunlight into the room, which can then be directed onto the subject by a second reflector in the room. The light from the diffused window can act as fill or even become part of the photo.

Exact placement of diffusers and reflectors will depend on the location of the windows in the room and the room's orientation to the sun. The advantages of being able to substantially increase the intensity of light in a room over what is naturally available and the flexibility allowed by being able to redirect that light, should make almost any indoor area with windows a more photographically useful environment.

Whether you are free to work outdoors or choose to take refuge inside, the potentials of applying the modified-sunlight technique to photographing still-life subjects are most intriguing. With tungsten light in a typical studio there are always problems of long exposures to obtain sufficient depth of field with small subjects, complicated by the old bugaboo of reciprocity failure and its corollary, color shifts. Add to this the problem of color balancing several never perfectly matched light sources.

When you use the sun as your light source, the advantages are numerous—it's abundant, constant in color, temperature during midday hours and allows the use of a much greater variety of color films. Best of all and most obvious are the facts that sunlight is free and that the equipment is inexpensive.

It should be expected, however, that some additional paraphernalia might be required to successfully photograph still-life subjects. Basic are some kind of table or stand to support the subject and possibly some backgrounds. If the subject includes objects that are shiny, then dark materials and supports may be needed to block out extraneous



1a

ALL PHOTOS BY THE AUTHOR.



2a



4a



3a

1a. Diffuser was set behind table with sun illuminating it from behind. Two boxes were placed on table, and an 18x24-inch sheet of plate glass was suspended between the boxes. The glassware was then arranged on the plate glass. Black plastic insulation sheeting was used to create a shroud around the setup to block out most of the light reflected by the surroundings. Insulation was supported by two stands with aluminum rods running from top of the diffuser. Front of setup was not shrouded, so some reflections would occur on surfaces of glassware to give its shapes some definition.

2a. A very large diffuser is required to shield half of model's figure from full sunlight. The device used in this situation is identical to the front panel of the "Tower of Power" (See November, 1975 issue) without hinges and hasp. When main illumination of subject comes from a single diffuser there usually should be sufficient light reflected from the surroundings to adequately fill shadows. The soft, almost omnidirectional light allows model exceptional freedom of movement without altering light's pleasing effect on her features.

3a. Softness of window light is due to placement of diffusion material over exterior of window to scatter direct sunlight. One reflector outside directs sunlight to another reflector positioned inside and to the far side of camera. Inside reflector beams light onto subject, opening up shadows created by window light. In addition to flattering light produced by this technique, light level is increased over natural, soft window light, which facilitates use of higher shutter speeds and slower films.

4a. The diffuser was placed above subject to shield it from both direct sunlight and excessive blue light from open sky. Illumination from diffuser lit background and filled shadows without creating any shadows visible from camera position. A reflector considerably smaller than the area of the scene being photographed directed a soft-edged beam of light on the area of the silver teakettle containing dried grasses. Reflector was positioned to one side and adjacent to camera position. Light-gold-colored foil gift wrap over pasteboard reflected light that subtly brought out warm tones in dried grasses. The overall effect of using a small reflector gives the scene a gentle vignetted character.

vide a variety of degrees of light transmission include bleached muslin, nylon curtain goods, matte acetate sheeting and heavy butcher paper.

A selection of very strong, well-made clothespins or small spring-loaded clamps, available at most hardware stores, along with masking or duct tape, will make it easy to create the tents and gobos (dark screens) you may require. Obviously, you'll need additional stands with wood or metal dowelling for crossbars to support these devices. You'll find that the Super Clamp from Bogen or the line of clamps from Braun will come in handy for securing the arrangement of screens, tents and the like.

With still lifes you'll also have the opportunity to elaborate on the devices for reflecting accent light on the subject. Small, very efficient reflectors can be cut from a sheet of silvered Lucite. Or if a colored accent is needed, Lucite mirror is available in a wide variety of shades. Black darkroom tape can be used to mask such small reflectors to conform to the shape of the illuminated area.

As it would take a very large volume to adequately describe merely the standard variations in studio lighting, so it is with the potential configurations and effects of modified sunlight. That all of the possibilities of technique or equipment are not covered here is far less important than the possibility that you'll now tackle a picture idea you previously considered beyond your scope and means. Once you take that step, you'll soon discover the endless variations possible when you enter the "Studio Without Walls."

□

light that would be reflected in the shiny surfaces. Some subjects may even require a tentlike affair to create an absolutely even light source.

Black materials that are inexpensive and easy to work with include plastic sheeting, flannel cloth and lightweight simulated felt. White materials that pro-





BLACK-AND-WHITE FROM CHROMES

It's Easier Than You Think

By John Worst

Haven't you wished on more than one occasion for a second camera loaded with black-and-white film when you were shooting color, or vice versa? It's true that some subjects are better photographed in color and that others are better in black-and-white. But just the same, pictures that are good in color are often equally good in black-and-white, mainly because the emphasis has been moved from the subject's colors to its shapes. It would certainly be great to have both options at all times.

For some photographers the answer to the dilemma is to carry a second camera or camera body loaded with the "other" film. But most of us have only one camera with which to do it all. Apart from the economics, there is always the urge to travel as lightly as possible, and although a second camera body would not be that much of a hardship to carry, its weight may be better substituted with another accessory lens.

For me, the ideal is to use one camera and one kind of film that will give it all: color transparencies, color prints and black-and-white prints. One could get all of this from a color negative, admittedly, but that means that slides would have to be made from nearly all negatives, and black-and-white prints would all have to be made on Kodak's Panalure paper. Because most people want slides in the first place, it is my opinion that it's more efficient to use color reversal film as the primary film.

Close-up of owl originally photographed with Nikkormat and 55mm Micro-Nikkor lens; Kodachrome-X exposed for 1/125 at f/4, then copied with electronic flash onto Kodak High Contrast CopyFilm at 1/8 and developed in diluted Elon-sulfite developer.

Assuming that the photographer's skills are up to par, there is certainly no problem in making a good color slide. Nor is there any problem in making a good color print from a color slide. Unicolor's PFS chemistry, the new Cibachrome process from Ilford, Beseler's RP-5 chemistry and Kodak's R-5 chemistry make this an easy realization for anyone with a working darkroom. There remains, then, the problem of making a good black-and-white print from a color slide.

It is well-known that when a color slide is copied on black-and-white film, the resulting negatives usually suffer from almost unprintable high contrast. This is illustrated in my black-and-white print from a color slide in which the subject was a 10-step Kodak gray scale. The Kodak Panatomic-X Film was rated at ASA 32 and developed in Microdol-X, 1:3, for 12 minutes at 70°F. The print was made on Ilford Ilfobrom No. 2 paper. (See photo No. 1). As you will note (within the allowable limits of magazine reproduction), there has been a compression of the scale with a loss of shadow and highlight details.

As one would expect, the answer to the contrast problem is to be found in the selection of the film used, coupled with low-contrast development. Before proceeding further, a brief discussion of the hardware needed will be helpful to you.

Any slide duplicator will do, although it is best to have a bellows unit and slide copying attachment. This combination makes it possible to crop the original slides, if needed. The illustrations for this article were all made from Kodak Kodachrome-X slides taken with

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a Nikkormat, Nikon bellows and slide copying attachment. The bellows was fitted with a Nikon Micro-Nikkor lens, and all prints were made on Ilfobrom grade No. 2 enlarging paper.

Although tungsten light can be used with good results, I normally use my Metz Mecablitz 196 electronic flash as the light source. This is mounted on a homemade stand (see photo E) which consists of two aluminum rods on Plexiglas® feet with a stationary platform having a 1/4-20 bolt (standard tripod-type thread) to hold the bellows unit and a movable platform that carries a wooden holder for the flash unit. This makes it possible for me to position my flash at any required distance from the slide holder to a maximum of 13 inches.

With a technique like this, sharpness is of great importance. To begin with, look for slides that are sharp and take great care in focusing before copying. In my opinion, it's best to use a back focusing technique, meaning that after obtaining rough focus of the desired image size, leave the lens locked in place on the bellows track and, with the lens wide open, do the fine focusing by moving the camera body. In the case of cropping a particular slide, you may have need for a highly magnified image. Therefore, it is recommended that you use your camera lens in a reversed position (with a reverse adapter) for optimum optical performance. Incidentally, it may be necessary to use a tungsten lamp for focusing because the average room light may not be bright enough to see the fine detail in the slide.

Contrast in black-and-white negatives produced from color slides can be lowered by giving some overexposure, followed by less-than-normal development. But one has to keep in mind that too much overexposure can, in some films, lead to excessive irradiation in the emulsion layer, which can materially reduce the apparent sharpness in the final image.

With visions of prints up to 16x20 inches in mind, my selection of film had to be made from the slower, thin emulsion films such as Kodak's Panatomic-X, Ilford's Pan F and even Kodak's High Contrast Copy Film. Additionally, any of the films selected should be capable of rendering negatives that would print normally on a



Comparison photos are all copies from the same slide. Original taken with Nikkormat, 55mm Micro-Nikkor lens and Kodachrome-X film exposed for 1/125 at f/11. All copies developed in Microdol-X, 1:19, enlarged 14X.

A. Copy made with Panatomic-X film appears grainy.

B. Copy made with Pan F film has low contrast with good grain properties.

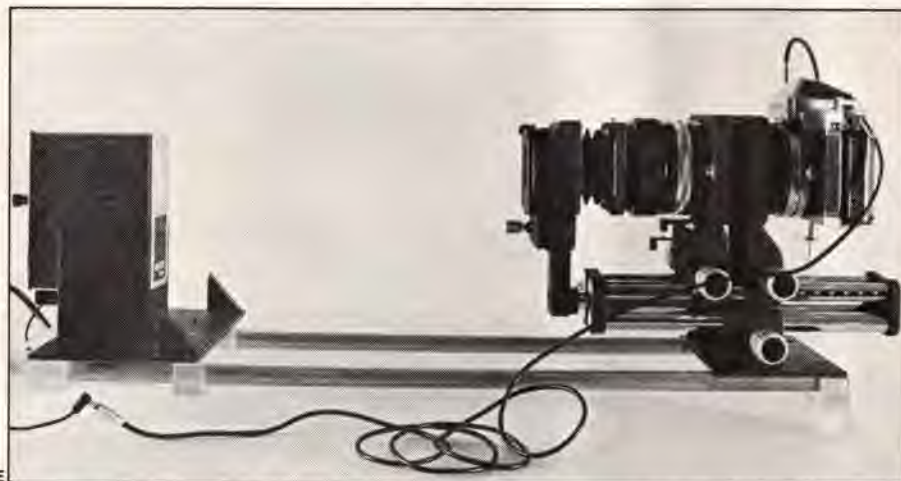
C. Copy made with Kodak High Contrast Copy film shows best detail and least grain.

D. Simian panhandler photographed with Nikkormat and 55mm Micro-Nikkor lens; Kodachrome-X exposed for 1/125 at f/11. Photo is good example because of contrast between dark orangutan and his light surroundings. Copy made with flash onto High Contrast Copy film at 1/8, developed in Elon-sulfite developer for 32 minutes at 21°C.

E. Copy setup consists of Nikkormat, 55mm Micro-Nikkor lens, bellows and slide copying attachment with Metz Mecablitz 196 electronic flash. Homemade stand allows flash to be moved to any distance from the slide holder up to 13 inches.

All photos taken with Nikkormat, printed on Ilford Ilfobrom No. 2 paper.

contrast grade No. 2 paper. This then would leave open the possibility of going to a grade No. 1 or No. 3 paper to handle contrastier or flatter negatives. I proceeded to test all three films, and the results of over 140 exposure and development tests follow here.



EXPOSURE WITH FLASH

My electronic flash unit has a proven guide number of 66 for an ASA 32 film or 92 for an ASA 64 film. But when it is used at the close ranges required in my copying procedure, my guide number has to be discounted by one full f-stop because of the absence of reflections from ceilings and walls that normally contribute to guide number evaluations. Therefore, the guide number had to be divided by 1.4, which brought it down from 66 to 47 and from 92 to 66. Electronic flash units which have a sensor for automatic exposure control cannot be used in the automatic position. They must be adjusted to the nonautomatic mode because the full power of the flash unit must be used.

Because the flash-to-slide distance is so short, I found it easier to convert the guide number—which is normally in feet—to a guide number given in inches. For example, my effective

guide number for an ASA 32 film then becomes $12 \times 47 = 564$ (remember, my original guide number of 66 had to be reduced to 47 because of the copying distance involved). For a film with an ASA of 64, it would be $12 \times 66 = 792$, etc. Following the same formula, it then becomes a simple matter to calculate the required guide numbers for other flash units once the true guide number is known.

Usually, I make 1:1 copies of my slides. Therefore, the required lens extension is always equal to the focal length of the lens being used. So the lens-to-film distance is then 2X the distance that is normally used, and because of this, the exposure has to be multiplied by a factor of four (the effective aperture is two f-stops smaller than indicated by the setting; $f/5.6$ is actually $f/11$, or $f/11$ is actually $f/22$, etc.). To make exposure calculations simpler I incorporated the factor of four into the guide number and, based

upon the figures for my flash unit, the guide number for an ASA 32 speed film—at a reproduction ratio of 1:1—becomes 288, and for an ASA 64 speed film it becomes 403.

As the subject for my experiments I used a Kodachrome-X transparency which contained an image of a Kodak 10-step gray scale. Because the gray scale represented an absolute in terms of tone reproduction it would be easy to detect even small variations in contrast in my prints.

Kodak's Panatomic-X film was the first to be tested, and with the flash at a distance of 13 inches from the slide holder, the aperture, according to my calculations, would have to be $f/22$ because:

$$\frac{288}{13} = 22$$

However, because I wanted to see the results of overexposure, the tests were made at $f/11$, $f/16$ and $f/22$.

After making the test exposures, the films were developed for varying lengths of time using different developer dilutions. The best results for Panatomic-X were obtained using Microdol-X diluted 1:19 (one part of stock developer with 19 parts of distilled water), using a developing time of 30 minutes at 70°F. (21°C).

Agitation was done for five seconds at the start, then for five seconds once every two minutes. Agitating in this manner contributed greatly in lowering the contrast of the negatives, and there was no ill effect due to bromide drag (streaking at the sprocket holes). For your own particular type of tank and agitation style a bit of experimenting will probably have to be done, and I merely recount my success using the methods and equipment available to me at the time.

The developer was treated as a one-shot and discarded after use. The film was then treated to a brief rinse in distilled water and fixed in the normal manner, followed by a 30-minute wash in running water.

The negative that was exposed at $f/22$ (according to my previous calculations) printed beautifully on Ilfobrom grade No. 2 contrast paper (see photo No. 2). Note that no overexposure was given the negatives, and the compensating action of the developer was all that was needed to keep the contrast to a printable level.

Ilford Pan F film (ASA 50) has a reputation for fine grain and seemed an appropriate film for a series of tests. I found that it can be treated very much the same as Panatomic-X using Microdol-X at the same dilution and

BLACK-AND-WHITE FROM CHROMES

yields slightly lower overall contrast.

Kodak High Contrast Copy film was the last one tested, and tackling this one turned into a *tour de force*. Because the film is normally designed to drop out all middle tones, I obviously had to go to more extremes than with the other films. It required a great number of tests, but I finally arrived at a formula for a developer based on Kodak's D-23.

Severe overexposure was also called for, and I had to work with my flash unit four inches from the slide holder. This meant that the film was actually exposed for an E.I. rating of one instead of Kodak's normal ASA rating of 64. This meant that I had overexposed the film by six f-stops.

The developer I used I call my "Elon-sulfite" developer (because that's all there is in it); a stock solution is made as follows:

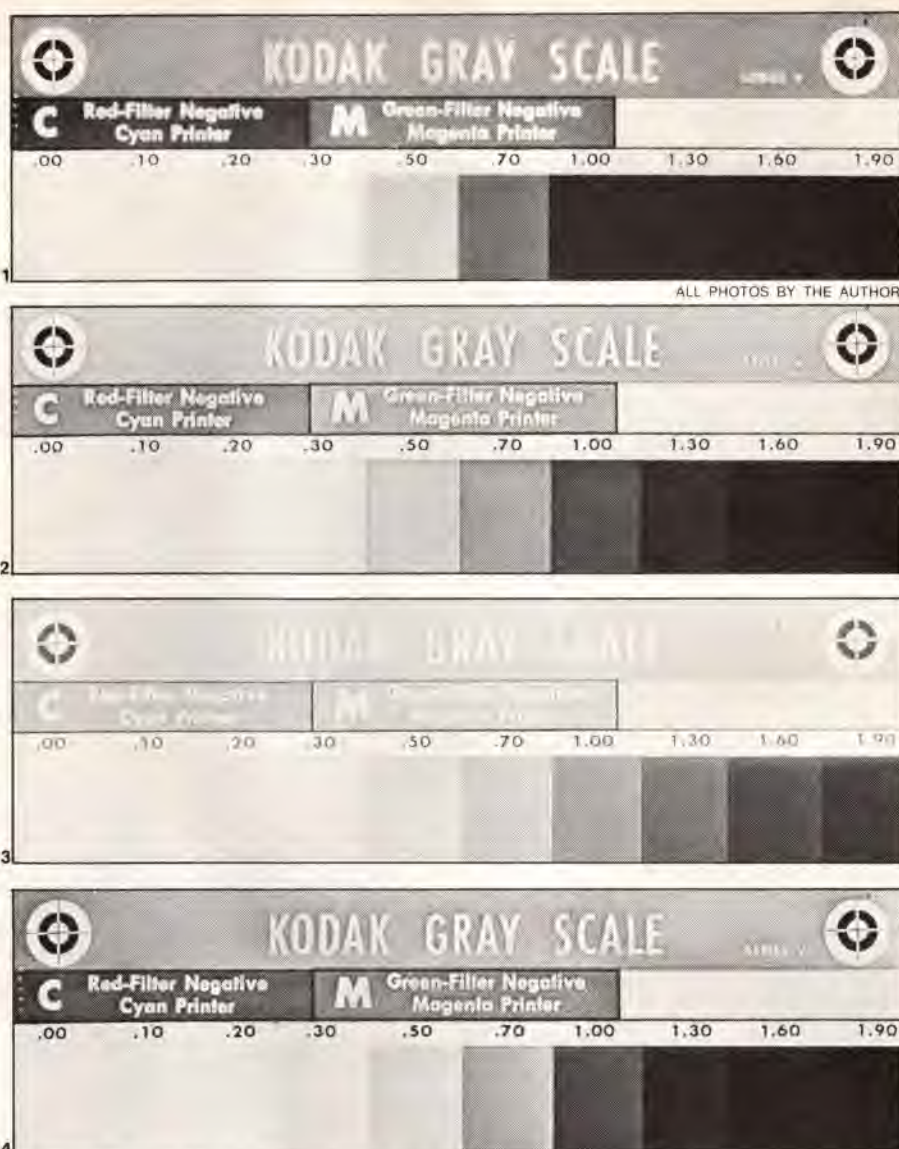
Distilled water (125°F.—50°C.) ...300ml
Elon (or metol)5g
Sodium sulfite (dessicated)100g
Distilled water to make400ml

For use, dilute 1:14 (i.e., 30ml of stock solution with 450ml of distilled water) and develop for 32 minutes at 70°F. (21°C.), agitating for five seconds at the outset and for five seconds once every two minutes (this is based on the processing of a 20-exposure roll of film).

The actual amount of developing agent used for the film is extremely small (37.5mg), and for that reason I feel that the use of distilled water is imperative. Rinsing, fixing and washing procedures are identical for those given in the use of the dilute Microdol-X developer.

The gray-scale print produced from this method was copied with the flash unit four inches from the slide holder with the lens set at f/11 (see photo No. 4).

Variations in contrast can be obtained by changes in developer dilution or by using a different developer. Increasing the concentration of the developer will result in higher contrast; often the developing time will have to be materially reduced to prevent the density from building up in the high-lights. However, it will be a rare slide that requires an increase in inherent contrast. In practically every instance, you'll be looking for ways to reduce the inherent contrast, and this can be



1. Kodak Kodachrome-X transparency of 10-step gray scale was copied with flash onto Kodak Panatomic-X film at f/22 and developed in Microdol-X, 1:3, for 12 minutes at 21°C., with 30-second-interval agitation. Copying on black-and-white film with normal exposure and development will always lead to higher-than-normal contrast.
2. Gray scale slide copied with flash onto Panatomic-X at f/22, developed in Microdol-X, 1:19, for 30 minutes at 21°C., with agitation for five seconds once every two minutes.
3. Lower-than-normal contrast can be obtained by developing Ilford Pan F film in Elon-sulfite developer, 2:9 for 15 minutes at 22°C.
4. Gray scale slide copied with flash onto Kodak High Contrast Copy film at f/11, developed in diluted Elon-sulfite developer (see text) for 32 minutes at 21°C.

done by further diluting the developer. Further dilution will call for even longer developing times, or you can use the Elon-sulfite developer for Panatomic-X or Pan F films.

For example, a gray scale print from a Pan F negative that was processed in Elon-sulfite developer diluted 2:9 (80ml of stock, plus 360ml of distilled water) and developed for 15 minutes at 72°F. (22°C.), with agitation as stated before, rendered a truly low contrast print on Ilfobrom grade No. 2 paper. The .00 white patch showed indications of graying over, and the 1.90 black patch was still far from black (see photo No. 3). This method could easily be used for copying slides of extremely high contrast.

Looking into the effects of filters, no

significant change in tonal values was noticed with the use of yellow, green or blue filters. But the use of a red filter was found to be useful whenever a blue sky needed to be darkened. It should be noted that using a red filter will require the need for refocusing the viewed image. One will find, however, that in most cases the sky tones will be rendered accurately enough without a filter, and thin cloud formations will show up when the black-and-white negative is printed.

With all three films used, the grain pattern, as expected, was excellent. The finest grain was found with High Contrast Copy film. The grainiest film seemed to be the Panatomic-X, with Pan F somewhere in between. However, the High Contrast Copy film

shows virtually no grain pattern and retains the finest detail. Incidentally, I always make it a practice to bracket my exposures and recommend you do the same. For dense slides I usually work at one full f-stop wider aperture, and for lighter slides I work at one full f-stop less than normal.

Cropping the slides is possible and gives the advantage of having a negative that will contain only the elements needed to make the final print. However, some adjustment in exposure will be required. For example, if you want to crop out half the original slide, this would be a 2X magnification factor over the usual 1:1 requirement. In this case, the distance from the lens-to-film plane is calculated as two times the focal length plus the focal length. Using a 50mm lens this would read as $(2 \times 50) + 50 = 150\text{mm}$. The formula for calculating the exposure factor is:

$$\frac{(\text{lens-to-film plane distance})^2}{\text{focal length}^2}$$

and in this example the arithmetic would be:

$$\frac{150 \times 150}{50 \times 50} = 9$$

Keeping in mind that for the 1:1 ratio a factor of four (two f-stops) was already incorporated into the guide number, we'll need to open the lens aperture by slightly better than one f-stop more for the 2X magnification, because the factor of nine is a little more than three f-stops.

Some readers may find figuring out the exposures a complicated business, particularly because an electronic flash unit is being used as a light source. However, making calculations based on my suggestions and shooting a series of test exposures will result in establishing an easy routine.

A logical question to ask at this point would be—is the quality of the black-and-white negatives copied from original color transparencies as good as those taken directly on black-and-white film? In theory, the answer must be a negative one (no pun intended) for obvious reasons. However, the practical application is something else, and in most cases I find it difficult to distinguish between prints made from negatives produced by copying an original color slide and prints made directly from original black-and-white negatives.

So for photographers who are not on working assignments, such as vacationers and other travelers, it is comforting to know that one type of film can fulfill all your print and slide requirements, and I'd say that such an advantage is more than enough. □

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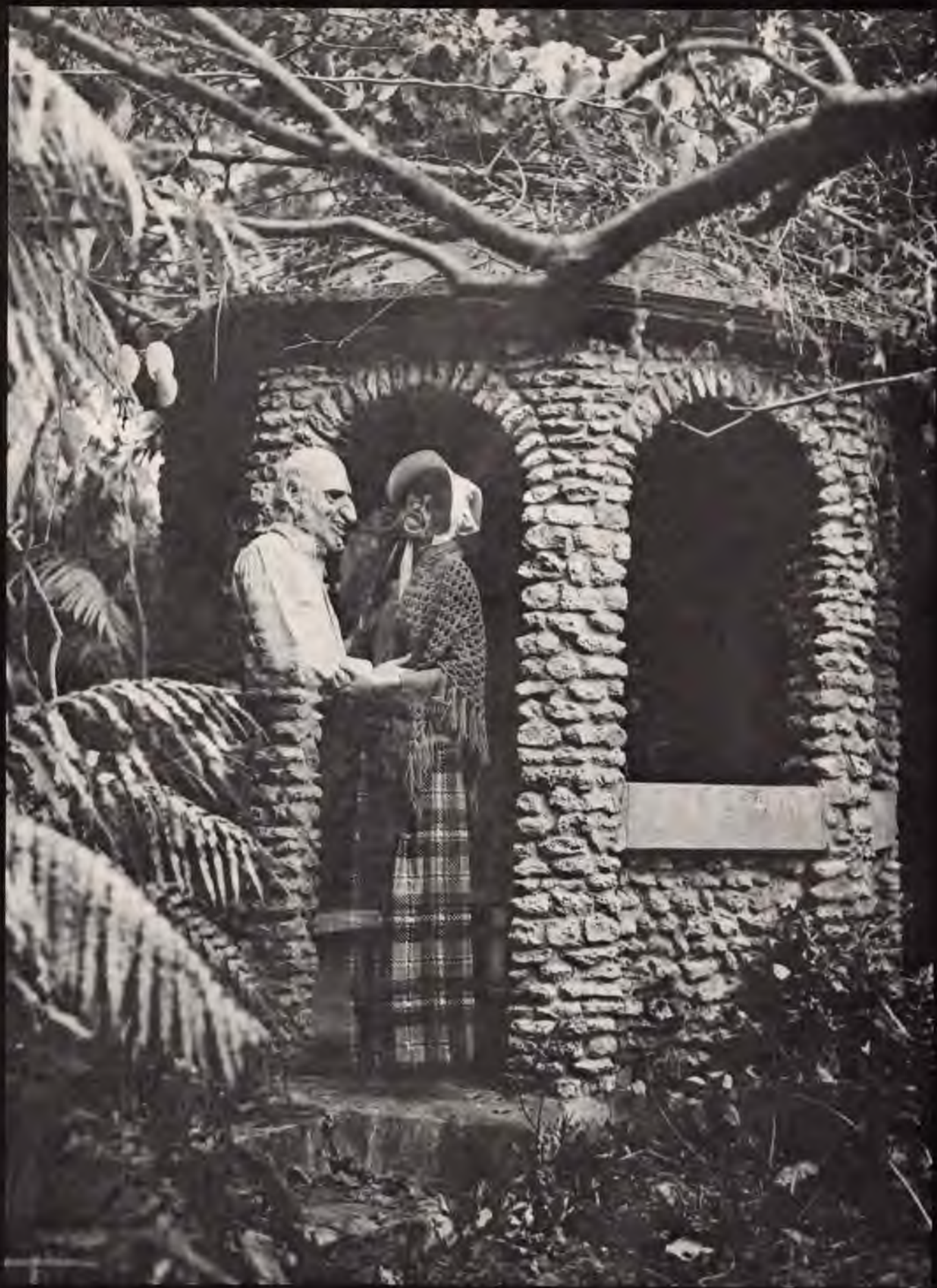
suzanne camp crosby: GHOULISH DELIGHTS

□ Like strange specters dwelling deep within the recesses of a child's imagination, Suzanne Camp Crosby's subjects at once repel and intrigue. The ghoulish creatures she creates with weird masks and fanciful costumes instill a delightfully gruesome element in the photographs on these pages. The macabre mood is sustained throughout the series by the props with which Suzanne adorns and shrouds her anonymous subjects.

Armed with faces purchased at a variety store, her mind dancing with hobgoblins, Suzanne transforms friends, neighbors or just people encountered on a walk. Even the most reticent models are enticed by the prospect of donning unearthly garb to cavort for this photographer's camera. The resulting images are as beguiling for us now as the images we conjured up when we were very young, and mysterious beasties seemed to lurk behind the trees during quiet walks, as tantalizing as the ghosts we once imagined hidden beneath the old clothes in grandma's attic trunk. These bewitching photos resurrect the spirits that once made us shriek and shiver during play. □

All photos taken with Calumet 4x5 view camera and Kodak Tri-X Film unless otherwise noted.

Lens: Schneider Xenar 135mm
Exposure: 1/50 at f/5.6
Paper: Agfa Portriga No. 3



Lens: Schneider Xenar 150mm
Exposure: 1/100 at 1/5.6, double-exposed
Paper: Kodak Polycontrast F

susanne camp crosby



Lens: Schneider Xenar 135mm
Exposure: 1/50 at f/4.7
Paper: Kodak Polycontrast RC



Lens: Schneider Xenar 135mm
Exposure: 1/30 at f/5.6
Paper: Kodak Polycontrast RC



Lens: Schneider Xenar 150mm
Exposure: 1/50 at f/4.5
Paper: Kodak Polycontrast F





susanne camp crosby

Lens: Schneider Xenar 150mm
Exposure: 1/100 at f/16
Paper: Agfa Portriga No. 3



Lens: Schneider Xenar 150mm
Exposure: 1/100 at f/5.6, double-exposed
Paper: Kodak Polycontrast F

susanne camp crosby



Camera: Kowa 6 2 1/4 x 2 1/4
Lens: 85mm Kowa
Film: Kodak Plus-X
Exposure: 1/60 at f/3.5
Paper: Kodak Polycontrast RC



Lens: Schneider Xenar 135mm
Exposure: 1/50 at f/5.6
Paper: Kodak Polycontrast F

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Exposure: 1/100 at f/16
Paper: Kodak Polycontrast F

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the chromega color print system

by steven rosenbaum

color printing part I



The Chromega color system is an ever-expanding product line which includes everything from easels to timers. Illustrated here are some of the more popular Chromega color printing products—most of which are fully compatible with other manufacturer's enlargers as well.

I cannot pretend to feel impartial about colors. I rejoice with the brilliant ones and am genuinely sorry for the poor browns." I doubt that Sir Winston Churchill was referring to a color print when this quote was made; however, it does underscore the significance of *subjective* evaluations in color printing. When judging the colors of your prints there are no absolute

"rights" and "wrongs;" there are a lot of "likes" and "dislikes." The color prints you make will not only reflect your sensitivity as a photographer and as a color printer; they will also include the private visions and personal prejudices of your viewers.

This is the first in a series of "systems" reports and deals in-depth with the Berkey *Chromega Color Printing*

system. First I will highlight some of the major features of the Chromega system, and second I will discuss some general color printing observations. In the continuing articles I will cover much the same ground with other major color printing systems. Hopefully, the net result will be that you'll be able to make more intelligent decisions regarding the specific equipment and materials you want. You'll have gained enough insight into specific techniques so that you'll be able to make better use of the equipment you already own. This series is not designed to be an introduction to basic color printing; however, there will be some relevant material on many levels. If you've never made color prints before, I'd suggest that you read *PhotoGraphic's* "Primer Series—Part Nine, Color Printing" (see November, 1975 issue) for a better understanding of the process in general.

EQUIPMENT AND MATERIALS

The Chromega Color Printing (CP) Filter Set consists of 23 3x3-inch acetate filters in seven graduated values from .025 to .50 in each of the three complementary colors (cyan, magenta and yellow). In addition, the filter set includes one UV filter and an extra .50 yellow filter. The UV filter, which should always be left in the filter pack when you're printing color, absorbs unwanted ultraviolet radiation produced by your enlarger lamp; the additional .50 yellow filter is provided to compensate for the high yellow filtration often necessary when printing the new color negative materials. The filters are each embossed with their values along one edge. To simplify the problem of filter storage and retrieval each filter set includes a convenient color-coded filter file. While these filters are made for the filter drawer on Omega enlargers, they will work with any enlarger that accepts 3x3-inch filters. The suggested list price of the filter set is \$13.95.

The Chromega Daylight Color Print Processing Drums are available in

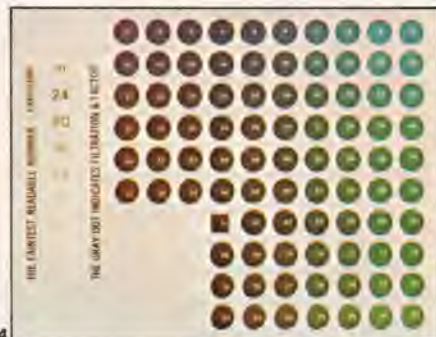


1



2

1. & 2. Both of these prints were made from the same negative. Neither one portrays this familiar early morning scene *exactly* as it appeared; however, each one in its own way characterizes a pleasant and believable sunrise setting. Printing to suit your personal taste should be a strong underlying motive in your color printing.



1. Unusual subjects may not integrate properly when used with a subtractive calculator. A predominance of one color may give an incorrect filter pack. In these situations use of a gray card negative will eliminate the problem. See text for details.

2., 3. & 4. Prints made on Chromega color paper should be evaluated when dry, since when wet these prints have a bluish haze, making accurate color judgments impossible. The resin-coated Chromega paper can be dried in a few minutes by simply blowing warm air from a hair dryer or other source over the print's surface.

ALL PHOTOS BY THE AUTHOR.

color printing part I

three different sizes, 8x10, 11x14 and 16x20. By means of a few removable paper guides and print separators, each of these plastic drums can be used to process more than one print at a time. The 8x10-inch drum, for instance, can accommodate either one 8x10 print, two 5x7 prints or four 4x5 prints at once. These removable paper guides also allow total access to the drum interior for thorough cleaning after processing. More important, the paper guides form a trough inside the drum which keeps the chemistry away from the paper until you are ready to begin the process. The friction-fitting end cap is notched to accommodate a plastic alignment pin on the drum itself. Thus by simply feeling for the proper orientation in the dark, a tight seal is assured.

By using offset cams which are molded into the end caps, the drum can rock in a left-to-right motion as it is rolled back and forth on a level surface. This patented "sine-wave" agitation feature is designed to break up any patterns of development which might result in unevenly processed prints. All chemicals are poured in and out of the drum in normal room light through a lightproof baffle built into the end cap. The drum prevents accidental scratching of the soft color emulsion during processing and is supplied with print separators, paper guides and a thorough instruction sheet. Among the items included in the instruction sheet are solution requirements (three ounces of chemistry for the 8x10 drum) and diagrams for the proper placement of the paper guides in the various drums. The Chromega processing drums are fully compatible with all color printing papers and chemicals. The suggested list prices for the drums are as follows: 8x10 drum, \$22.95; 11x14 drum, \$36.95, 16x20 drum, \$53.

The Chromega Color Print Chemistry is supplied in easy-to-mix, liquid concentrate form. When prepared in its entirety, the kit will make one gallon each of developer and bleach-fix and

two gallons of stabilizer—enough for processing approximately 43 8x10 prints. If you prefer, directions are included for mixing one quart of chemistry at a time. Included along with the chemical kits are two measuring cups which should help you to accurately mix the smaller quantities of solution.

Recommended temperature for drum processing of prints is 100°F. This temperature can be achieved by preheating all the chemicals to the desired temperature or by using a presoak water bath which has been heated to the appropriate temperature as shown on the chart (nomogram) supplied with the chemistry. Total processing time is less than 10 minutes and involves seven steps, including the presoak and two wash steps. The Chromega color print chemistry has been designed for use with Chromega color paper; however, it will work well with any other type A color paper. The suggested list price for the gallon kit of Chromega color print chemistry is \$17.95.

The Chromega Resin-Coated Color Paper is available in four surface textures (glossy, matte, silk and brilliant) and in four of the most popular sizes (5x7, 8x10, 11x14 and 16x20). The resin-coated paper base permits fast washing and drying so that print judgments (which should be made on dry prints only) can be done with little interruption of your work pattern. A practical trouble-shooting chart, along with a number of more technical recommendations about paper handling and storage, make the data sheet which is packaged with this paper worth posting as reference in your darkroom. Suggested list price for 100 sheets of 8x10 Chromega color paper is \$34.50.

The Chromega Automatic Dual-Action Agitator is a tabletop support for the print processing drums mentioned earlier. The base rotates the drum at a uniform rate of speed, while gently rocking it from side to side at the same time. While the final print might not appear any different if it had been properly processed in a hand-rolled drum (as opposed to one which was agitated on the motorized base), the hand-agitated print requires constant monitoring, while the motorized base offers the same consistency but saves the user some energy. The agitator base will accommodate daylight processing drums of any size and comes with a set of centering rings which fit on the processing drums and prevent them from drifting off the base. Suggested list price for the agitator is \$69.95.

SUBTRACTIVE CALCULATOR

The Chromega Subtractive Color Calculator is a device which will provide you with the correct exposure and filtration necessary to make good color prints from your negatives. By using the light from your enlarger and passing it through one of your negatives—as if you were making an enlargement—a contact print is made of the calculator. When processed and dried, this calculator test print is evaluated. By locating one dot that is gray out of 88 on the calculator test grid, the correct filtration is identified. Also indicated on the calculator print will be the correct exposure for that negative. By placing the indicated amount of filtration in the enlarger and adjusting the exposure, an enlargement can be made. As long as you select an "average" negative (i.e., properly exposed and processed and having a full range of tones), the resulting print should be quite acceptable.

According to one reliable source, the average American family consists of 3.44 people. It would seem right, therefore, that if you photographed a father, a mother and their 1.44 children, you should have an "average" negative. Well, maybe you would if you were making the photograph for the census bureau, but if you want to make color prints from that negative, it might pay to look at what an "average" negative means to a *subtractive calculator*.

Regardless of the subject matter you photograph, an "average" negative to a subtractive calculator is one which contains an almost equal mixture of the primary colors of light—*red*, *green* and *blue*. These primary colors, when equally combined, will produce neutral density—a gray card contains equal amounts of the three primary colors. You can be absolutely certain of producing an "average" negative, one which contains equal amounts of red, green, and blue, by photographing a gray card manufactured and sold for this purpose. This procedure, while accurate, may prove impractical or undesirable for your everyday shooting needs. It's only necessary that your "average" negative contains a normal range of colors, with no one or two predominating the scene. When this average negative is printed through the diffusion filter supplied with the subtractive calculator, the paper receives an exposure which is a blend of all the tones in the negative.

The calculator simply enables you to make a number of simultaneous

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color printing part I

side-by-side exposures with each one slightly changing the combined filtration of cyan, magenta and yellow light. The exposure which results will produce a series of small color patches. Where the color patch looks gray (not blue, not green, etc.) that patch will reveal the appropriate filtration needed to print your negative. Simply refer to the chart which accompanies the calculator to determine what filtration corresponds to that circle or dot. Once determined, the necessary filtration is placed into the light path of your enlarger by using the CP filters described earlier.

Just as with your black-and-white negatives, color negatives can vary in *density* because of differences in exposure or processing. Therefore, in addition to determining the correct filtration, each subtractive calculator also provides a means for determining the correct *exposure*. This insures that the gray card you photographed will be gray—not black or white—on your print. The calculator not only takes into account the printing characteristics of your particular negative, but it also allows for the added density of the necessary CP filters.

There are times when a print based on information supplied by the subtractive calculator is not perfect. This generally happens when your negative contains a predominance of one color or another, as in the case of a sunset. At this point in your color printing career, the best way of dealing with this kind of problem is to recognize the potential printing difficulty at the time of shooting. Then by exposing an additional frame at that time, under the same lighting conditions, and by prominently including a gray card in this otherwise identical negative, you will have provided an "average" reference point which will not fool your calculator. Subsequently, when printing these negatives, make the calculator print from the frame which contains the gray card and then simply switch the negatives. Now print your original negative using

filtration and exposure determined by the subtractive calculator.

An enlarger lamphouse which is fitted with dichroic filters may be used to change the color of your printing light instead of using the acetate CP filters. However, since the subtractive calculator is actually made up of tiny pieces of acetate filter material similar to your CP filters, it is possible that a dichroic color head will not produce exactly the same color of light as acetate filters at equivalent settings; this is due to the differences of the filter materials. At the very worst, this may mean that you'll need to make additional filter corrections once you view the print made with the calculator-supplied data and the dichroic filter head.

If you want to work with a dichroic filter head, I would advise you to be sure to make your initial calculator print with *some* filtration dialed into the lamphouse (e.g., 50Y, 40M, with Kodak's Vericolor II Film). By doing this, you are reducing the amount of filtration that will be called for by the calculator; therefore, you are reducing the percentage of error, if there is, in fact, a discrepancy between your calculator and your dichroic filters. Of course, just as in black-and-white printing, burning-in and dodging can be used on your color prints.

The Chromega Color Calculator Kit consists of a 4x5 subtractive calculator, an image diffusion filter, which must be in place when the calculator test print is made and a gray-scale comparator card, which helps you locate the one gray dot. This kit may be used with any enlarger and will work with any color printing paper designed to make color prints from negatives. The suggested list price of the calculator kit is \$21.95.

The Chromega Simtron II Color Analyzer is used once the correct exposure and filtration have been determined, either by trial-and-error or by the use of a subtractive calculator. Then this data can be programmed into an electronic analyzer. Once programmed, the analyzer will determine the correct filtration and exposure necessary to print other negatives; this eliminates the need for trial-and-error prints or subtractive calculator prints from every negative you want to print. On the Simtron II, programming is simply a matter of turning a few dials until a needle on the meter is centered. The analyzer uses a sensing probe which mounts under the enlarging lens. A bracket is supplied which allows for the mounting of the probe on Omega

enlargers; an optional mounting bracket is available to support the probe on a Beseler enlarger. Suggested list price for the analyzer is \$179.95.

For those who are starting from scratch, the Chromega Subtractive Color Printing Kit may be of interest. It consists of one 8x10 daylight processing drum, one gallon of color print chemistry, one 3x3 color printing filter set and one subtractive calculator. This kit has a suggested list price of \$71.95. If purchased separately, the combined list prices of these items would add up to \$76.80. Your local dealer can provide you with more specific costs based on your needs. He should also be able to introduce you to some other Chromega system components like dichroic lamphouses and enlargers, timers, easels, lenses and a host of related equipment.

COSTS

The combined cost for an 8x10 print is approximately 77¢, based on the suggested list price of the materials, as follows: Chromega resin-coated color paper, 100 sheets, \$34.50 = 34½¢ per 8x10 print; Chromega color print chemistry, 43 prints at \$17.95 per gallon = 42¢ per 8x10 print.

In addition to the easy-to-follow instruction manuals and data sheets which are packed with each component, there is another significant element in the Chromega color printing system. The traveling Berkey Color Printing Workshop is a comprehensive seminar which offers you the opportunity to actually make color prints and gain insight into the color printing process. The one-day workshop travels to major cities throughout the country. To find out when it will be in a city near you, contact: Omega Division, Berkey Marketing Companies, Inc., 25-20 Brooklyn-Queens Expressway West, Woodside, New York 11377. The workshop costs \$25 to attend and should be of great value whether or not you have ever made a color print. The fee includes seminar attendance, all literature, supplies used and a chance to get answers to all those questions you've had.

All in all, the Chromega color printing system offers the capability for making consistently good color prints, regardless of the subject matter you choose to print. If you're really serious about making the best prints you can, it's important to establish repeatable work habits and a critical eye toward your work. Try to learn from your mistakes, and you'll wind up making fewer of them and more high quality prints. □



THE "NO-LIGHTING" TECHNIQUE

Pleasing Portraits the Simplest Way

By Mike Stensvold

Have you ever found yourself frustrated by how-to photo articles whose projects require either more equipment than you can afford or more expertise than you care to acquire? If so, then here's a simple project just for you.

If your equipment is limited to a camera and a lens, and your expertise consists only of the ability to focus that lens and hold your camera steady, you've got all you need to successfully complete this project—to produce a pleasing portrait using only this simple equipment.

Here's the secret, and it's easy, as promised. Just put your model between your camera and the sun, with some bushes as a background. (Both sun and bushes are free, of course, and available almost everywhere.)

One of the most common faults in outdoor pictures of people is the harsh look produced by photographing them in direct sunlight. To prevent these harsh shadows, such methods as fill-in flash, reflectors and even the use of an indoor studio have been recommended. But none of these is really necessary to produce very pleasing portraits.

Lighting for in-studio portraits should be soft, because soft lighting generally produces the most pleasing results. Outdoors, soft lighting is easily produced through the technique of "no lighting." Just face your model away from the light source (the sun), and you'll get a pleasing, softlit portrait.

Lots of you won't believe the "no-lighting" technique will work until you've tried it because it's so simple, but as you can see from the accompanying photographs, it really does work. And it even works for color photos. You'd expect color shots made this way to come out too blue, because you're actually using the shade to "light" the face, but I've used the technique with many rolls of Fuji Fujichrome, and Kodak's Ektachrome-X

and Kodachrome II and always achieved pleasing results. (The Kodachrome was processed by Kodak, the Ektachrome-X and Fujichrome by Roger Davidson, 12506 Montana, Los Angeles, California 90049.)

You'll find that you can use variations of the "no-lighting" technique. You can shoot without the bush background, allowing the sunlight to fall on the model's back. This is called back-lighting and will produce a striking rim-lit effect. Be sure to use a lens hood, and don't let the sun shine directly into the lens, or you will get an unpleasant flare effect.

Another variation is to shoot in open shade—in the shadow of a building or other large object that keeps direct sunlight from hitting the model's face. That's the secret of the "no-lighting" technique—no lighting. Keep direct light off the model's face.

You don't need a light meter to determine the proper exposure for a "no-lighting" portrait. Just open the lens up $2\frac{1}{2}$ to four f-stops from your basic daylight exposure of f/16 at a shutter speed equal to the reciprocal of your film's ASA speed (basic daylight exposure for ASA 125 film is f/16 at $1/125$; for a "no-lighting" portrait, open up to about f/5.6 at $1/125$). It might be a good idea to bracket your exposures the first time you try this (make one exposure with the lens opened up $2\frac{1}{2}$ stops from the basic daylight exposure, one with the lens opened three stops and one with the lens opened four stops) to see which exposure produces the results you like best.

If all that sounds too complicated, I've found that an exposure of $1/250$ at f/5.6 with Kodak Tri-X Film works just fine, and that figure should put you right in the ballpark. It's a good idea to use a fast film like Tri-X or Ilford HP4 so that you can use a fast enough shutter speed to keep camera movement from blurring your pictures. A lens opening of around f/5.6 is best,



1. Model was photographed using the basic "no-lighting" technique with bushes as background. Hasselblad $2\frac{1}{4}\times2\frac{1}{4}$ was used with 150mm lens; straight print from Kodak Tri-X negative was made on grade No. 2 Ilford Ilfospeed paper.
2. Open-shade variation of "no-lighting" technique was used for this portrait. Note that a light background was used with dark-haired model to provide separation. Straight print was made on grade No. 2 Ilfospeed paper from Tri-X negative exposed through 135mm lens on Nikon F.

because it provides enough depth of field to keep the entire face in focus but little enough depth of field to keep the background out of focus for a pleasing effect.

"No-lighting" portrait makers who own light meters can certainly use them. With an incident-light meter, just take a reading in the usual manner—hold the meter right in front of the model's face and point it at the camera. With a reflected-light meter, take a close-up reading from the palm of your

"NO-LIGHTING"

hand, then open the lens up one stop from the indicated exposure. (Exposure as per a reflected-light reading will reproduce whatever you take the reading from as a medium gray in a black-and-white photograph. The skin on the palm of your hand is about one stop lighter than medium gray, and opening the lens up one stop from the indicated reading will reproduce it—and the rest of the tones in the scene—properly.)

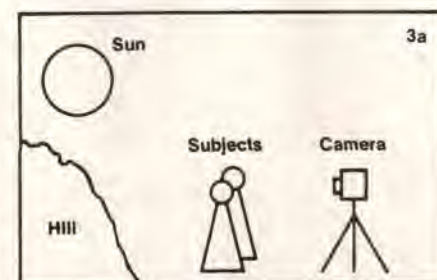
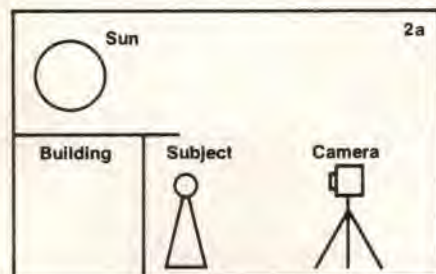
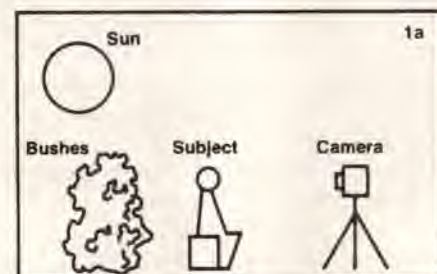
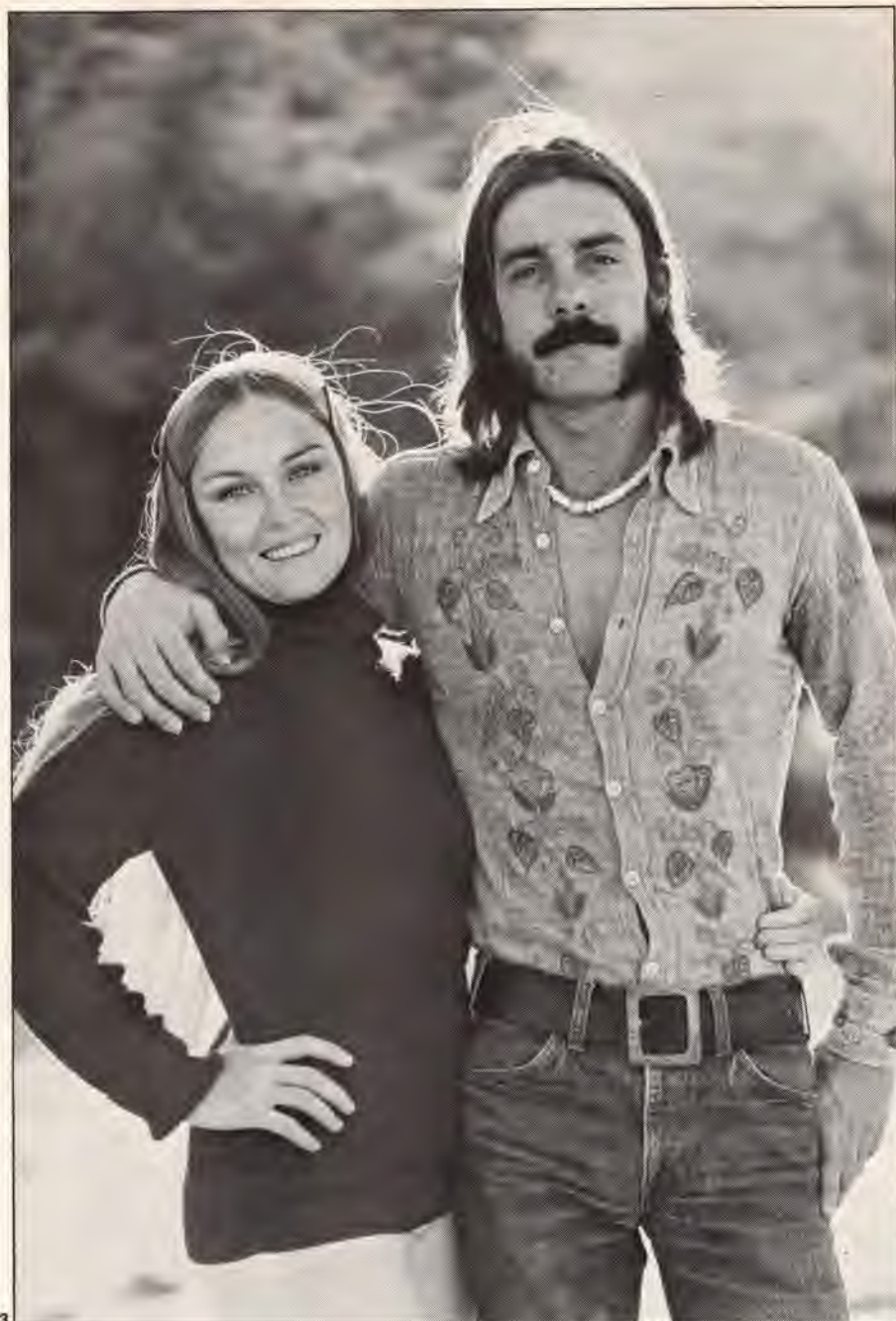
One thing to watch when shooting "no-lighting" portraits is the tone of the background as compared to the tone of the subject. If your model is fair-haired, using dark-toned bushes for the background will provide contrast between the model and the bushes. Likewise, light-colored bushes should be chosen as the background for a dark-haired or clothed model.

Something to watch if you're shooting "no-lighting" portraits in color is the color of the surroundings. If you shoot amid a jungle of greenery, you might wind up with a somewhat green portrait. If you shoot in the shade of a bright red barn, you might get a red-dish portrait.

The "no-lighting" technique will work with any camera and any lens, but the most pleasing results will be produced if you use a lens that is about twice the focal length of the camera's "normal" lens, which is what most portrait photographers do. For example, a 100mm lens would be a good choice for a full-frame 35mm camera or a 150mm lens for a 2 1/4 x 2 1/4 camera.

Some miscellaneous tips: make sure that the bush background doesn't include a telephone pole that will appear to "grow" out of the model's head. Shoot lots of pictures—film is relatively cheap, and it's hard to capture really nice expressions in a few shots unless you've had a lot of practice. If you're shooting head shots or head-and-shoulders portraits, provide your subject with a chair or bench to sit on—people are more relaxed when sitting than when standing. Look for fine details like wrinkled collars and smudged makeup—it's a lot easier to correct these before shooting than after.

Well, there you have it—the "no-lighting" technique for pleasing portraits, a project you can successfully undertake equipped only with a camera and a lens. It's certainly nothing new, but judging from the number of harshly lit outdoor portraits I've seen, it's not often used, either. Why not try it? □



3. Couple was photographed with 150mm lens on Hasselblad in late afternoon to demonstrate rimlit variation of "no-lighting" technique. Rimlit effect is best achieved in early morning or late afternoon, when sun is fairly low in sky, using single-lens reflex camera so you can see flare effects. Photographer's hand was used as "extension" of lens hood to keep sun out of lens.

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pop

solarization

10 easy steps for repeatable results

by derryl g. berry

At first glance, the photographs on these pages resemble Sabattier prints, but with careful research and a bit of experimentation, I found a technique to obtain quick and successful results with a different procedure. All you need to achieve the effect with your own images are a normally equipped darkroom, high contrast paper, such as Agfa Brovira No. 6, and a contrasty negative.

The technique involves soaking high contrast paper in developer first, then exposing it under the enlarger. In POP solarization, the image develops during the exposure, similar to the way that the image "prints out" on printing-out-paper or POP. As the image prints out, the shadow areas develop quickly and become desensitized to further exposure. The highlight areas develop slower and do not become as desensitized as do the shadows. In effect, the shadows dodge themselves, the highlights burn-in, and the contrast balances automatically. What I discovered while working with this technique is that sometimes the image has a tendency to partially reverse during printing—to solarize. The possibility of controlling that tendency is intriguing.

In POP solarization the soaked high contrast paper is given two exposures to the negative. After the first exposure

is made, the image is allowed to print out as much as possible—this only takes about 30 seconds. The print is then given a second exposure to cause a reversal of some tones instead of overexposure. The first exposure must be bright enough to cause the image to print out to about $\frac{3}{4}$ of a complete exposure and short enough to prevent it from printing out too much to create an interesting image. The second exposure time can be several multiples of the first exposure time, depending on the amount of solarization desired. The exact procedure to produce a POP solarized print is as follows:

10 EASY STEPS FOR POP SOLARIZATION

1. Set the enlarger lens at or near its maximum opening—the first exposure must be short and bright.
2. Focus a contrasty negative onto a piece of test paper, using a sheet of glass as an easel.
3. Soak a piece of high contrast paper in fresh normal developer for at least one minute. I develop with Kodak Dektol mixed 1:2.
4. Put the paper, emulsion side up, on the glass and gently remove *all* of the developer from the surface, using a paper towel or photo chamois.
5. Place a red filter somewhere in the enlarger light path, turn on the en-



ALL PHOTOS BY THE AUTHOR.



1. POP solarized print on Agfa Brovira No. 6 exposed first for four seconds at $f/4.5$, then exposed for 12 seconds at $f/4.5$ and developed in fresh Dektol mixed 1:2. Notice the white tail-light, license plate and other white areas.
2. POP (printing-out paper) technique only. Image printed on Agfa Brovira No. 6 paper, exposed for 45 seconds at $f/16$ and developed in fresh Kodak Dektol mixed 1:2.
3. POP solarized print on Agfa Brovira No. 6 exposed first for three seconds at $f/4.5$, then exposed for nine seconds at $f/4.5$ and developed in fresh Dektol mixed 1:2. Notice the black lines in place of normal white Mackle lines. Faces of clowns are normal, not reversed.
4. POP Sabattier-effect print on Agfa Brovira No. 6 exposed first for four seconds at $f/4.5$, left for 30 seconds, reexposed by firing flash unit with layer of paper towel at ceiling, then developed in fresh Dektol mixed 1:2.

pop solarization

larger and position the glass so that the paper is in the desired area of the projected image.

6. Turn the enlarger off, remove the red filter and make a first exposure. Try five seconds as a starting point.

7. Wait for at least 30 seconds. The result should be a very contrasty but recognizable print which looks as though it needs more exposure—because it does. If you don't get a contrasty print, repeat steps No. 6 and 7 until such a print is obtained.

8. Make the second exposure at three times the first exposure for a start. (You can change your enlarger timer during the waiting period.)

9. Return the print to the developer for 20 to 30 seconds. This will deepen the blacks, which can't be fully developed by the small amount of developer remaining in the emulsion after the surface developer is removed.

10. Stop, fix, wash and dry the print per your normal routine when you are satisfied with the results.

PRODUCING A GOOD PRINT

If you're not satisfied, you can make adjustments for either or both exposures and try again. In so doing, consider the following results and their possible improvements: if the print looks like an *overexposed* normal print, *decrease* first or both exposures; if print looks like an *underexposed* normal print, *increase* second or both exposures. To obtain more solarization, decrease first or increase second exposure; for less solarization, decrease second or increase first exposure.

The effect produced by POP solarization is a function of the relationship of the two exposures to each other and of the relationship of each exposure to the characteristics of the POP technique. The two exposures can be changed, separately or in conjunction with one another to produce varying degrees of solarization. If the first exposure is too short, the second exposure will not solarize the image. Instead, it will merely cause the image to print out to normal or anything between under- and overexposed. On the other hand, if the first exposure is too long, the image will print out fully, thus desensitizing itself to the second exposure. The result will be anything from very little solarization to an overexposed normal print.

Conversely, if the second exposure is too short, the image produced by the first exposure will not be changed



1. POP solarized print on Agfa Brovira No. 6 first exposed for five seconds at $f/4.5$, then exposed for 12 seconds at $f/4.5$ and developed in fresh Dektol mixed 1:6.

2. POP solarized print on Kodak Kodabrome F UltraHard paper first exposed for six seconds at $f/5.6$, then exposed for 25 seconds at $f/5.6$ and developed in fresh Dektol mixed 1:2.

3. POP solarized print made on Kodabrome F UltraHard paper first exposed for five seconds at $f/5.6$, then exposed for 25 seconds at $f/5.6$ and developed in fresh Dektol mixed 1:2. The second exposure was effectively decreased two stops by reducing the voltage to the enlarger lamp.



much. If the second exposure is too long, solarization may be carried further than desired, producing a print which more closely resembles the Sabbattier effect. The second exposure can be increased past the point where good blacks are produced to a point where those areas actually decrease in density with increased exposure. In other words, because of a long second exposure, the print may not have good blacks. To correct this, the second exposure should be shortened. If this results in too little solarization, then the first exposure can be shortened also.

The second exposure causes the reversal of tones mainly in the darker midtones, which tend to decrease in density. The lighter midtones tend to increase in density. The very dark areas do not reverse because of the desensitizing characteristic and because of the partially (or fully) exhausted developer in those areas. The very light areas do not reverse because they have had very little exposure and development.

INTERESTING VARIATIONS

If an authentic Sabbattier effect is what you want, you can use the POP solarization technique and simply reexpose the print to white light after the 30-second wait, put it back in the developer, stop, fix and process normally. The reexposure time must be determined by trial and error. However,

since the image prints out to the same degree every time for a given first exposure, successful results can be repeated easily, assuming that the reexposure time can be controlled accurately. I fire a small electronic flash unit toward the ceiling to reexpose prints, varying the output by placing paper towels over the unit.

The results of POP solarization and the Sabbattier effect are similar. The midtones partially reverse, and Mackie lines appear with both techniques. However, in POP solarization the Mackie lines are black, and in the Sabbattier effect the Mackie lines will be white. The black lines can be produced in POP solarized prints by decreasing the first exposure to a point where the second exposure is the one which does all the work; in other words, very little image results from the first exposure. The second exposure causes the print to look almost normal, and black lines appear where white Mackie lines would be.

With POP solarization it's possible to produce a subtle type of solarization, a print which looks normal at first glance but on closer examination seems enhanced by touches of solarization. This effect can be achieved by decreasing the exposures so that they add together to produce an almost-normal print. I often make a strongly solarized print first, then merely close the lens down a stop or so to get a subtle solarization with the same exposure times.

I have achieved an effect resembling posterization sometimes by reducing the intensity of the second exposure by one or two stops and then compensating with increased exposure time. I do this by varying the enlarger lamp voltage with an ordinary room light dimmer rheostat. Although I can't yet produce the effect at will, I plan to continue experimenting, because I'm intrigued by the possibility of being able to produce a posterized print with only one sheet of paper. I emphasize that I've only had minimal success with this variation but pass the idea along with the hope that others will find a way to achieve predictable results.

Darkroom manipulations can produce truly fascinating effects. The techniques of solarization, posterization and Sabbattier-effect printmaking are all interrelated. With some diligent experimentation and perhaps a happy accident, you're likely to stumble across some as-yet undiscovered but similar phenomena. That, after all, was the genesis of POP solarization. □

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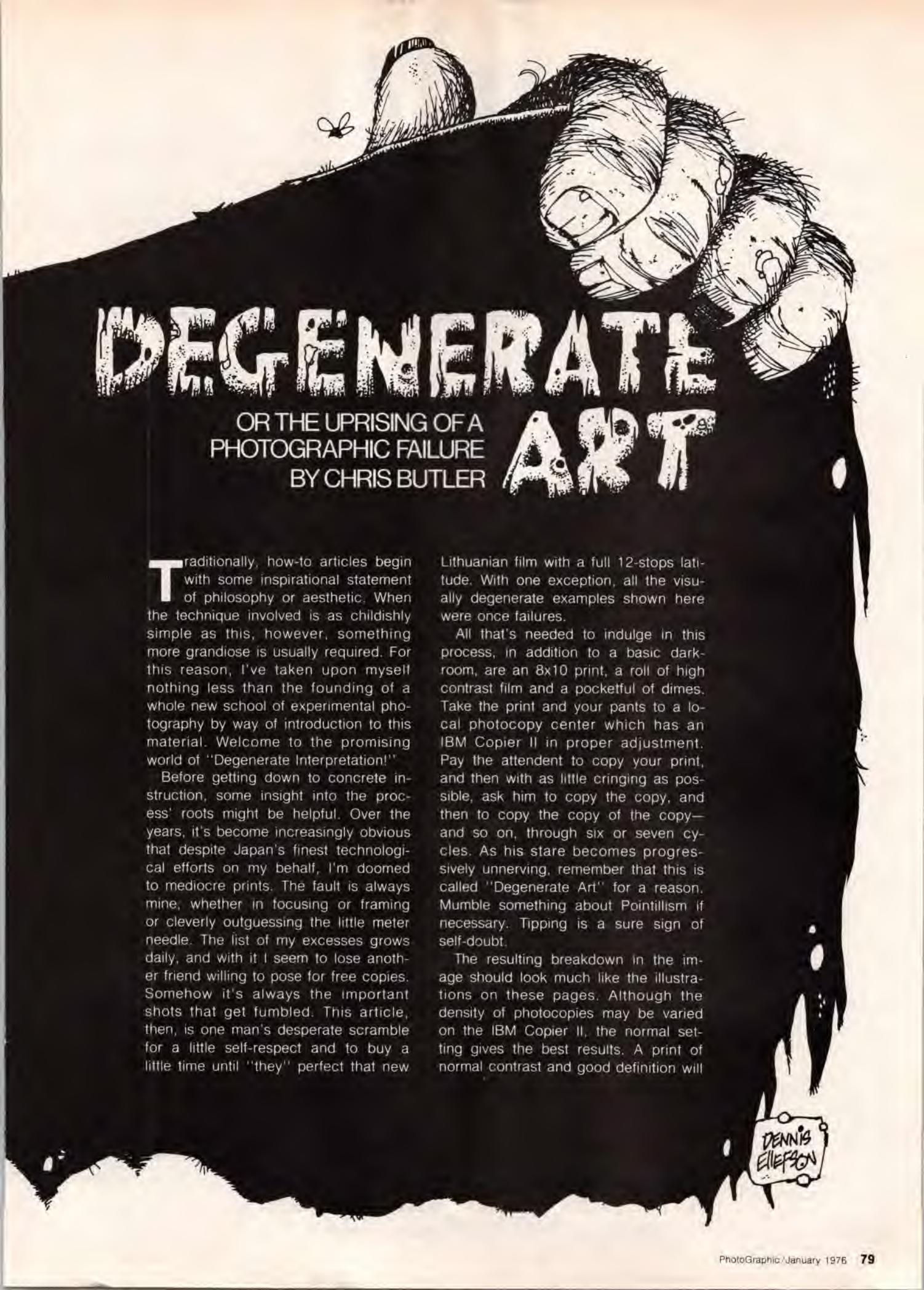
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DEGENERATE ART

OR THE UPRISING OF A
PHOTOGRAPHIC FAILURE
BY CHRIS BUTLER

Traditionally, how-to articles begin with some inspirational statement of philosophy or aesthetic. When the technique involved is as childishly simple as this, however, something more grandiose is usually required. For this reason, I've taken upon myself nothing less than the founding of a whole new school of experimental photography by way of introduction to this material. Welcome to the promising world of "Degenerate Interpretation!"

Before getting down to concrete instruction, some insight into the process' roots might be helpful. Over the years, it's become increasingly obvious that despite Japan's finest technological efforts on my behalf, I'm doomed to mediocre prints. The fault is always mine, whether in focusing or framing or cleverly outguessing the little meter needle. The list of my excesses grows daily, and with it I seem to lose another friend willing to pose for free copies. Somehow it's always the important shots that get fumbled. This article, then, is one man's desperate scramble for a little self-respect and to buy a little time until "they" perfect that new

Lithuanian film with a full 12-stops latitude. With one exception, all the visually degenerate examples shown here were once failures.

All that's needed to indulge in this process, in addition to a basic darkroom, are an 8x10 print, a roll of high contrast film and a pocketful of dimes. Take the print and your pants to a local photocopy center which has an IBM Copier II in proper adjustment. Pay the attendant to copy your print, and then with as little cringing as possible, ask him to copy the copy, and then to copy the copy of the copy—and so on, through six or seven cycles. As his stare becomes progressively unnerving, remember that this is called "Degenerate Art" for a reason. Mumble something about Pointillism if necessary. Tipping is a sure sign of self-doubt.

The resulting breakdown in the image should look much like the illustrations on these pages. Although the density of photocopies may be varied on the IBM Copier II, the normal setting gives the best results. A print of normal contrast and good definition will

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DEGENERATE ART

degenerate more precisely than a mediocre print. However, contrast is easily the more important of the two considerations. Final sharpness will be due mainly to the crisp grainlike image created by the process itself. Variable contrast filters and papers would be wiser investments for this technique than a better enlarging lens.

Using a high contrast film such as Kodak High Contrast Copy Film and close-up accessory lenses if needed, copy the degenerated image that most appeals to you. Bracket by half stops until you're intimately familiar with the film chosen. High Contrast Copy film has one particularly endearing feature—it may be developed in Kodak Dektol mixed 1:1 for five minutes at 68°F.

Printing high contrast film is an acquired skill. Expect to make some test strips, especially until you can recognize which negative is best suited to your needs. Since this is a high contrast process, don't hesitate to use extremely high contrast papers.

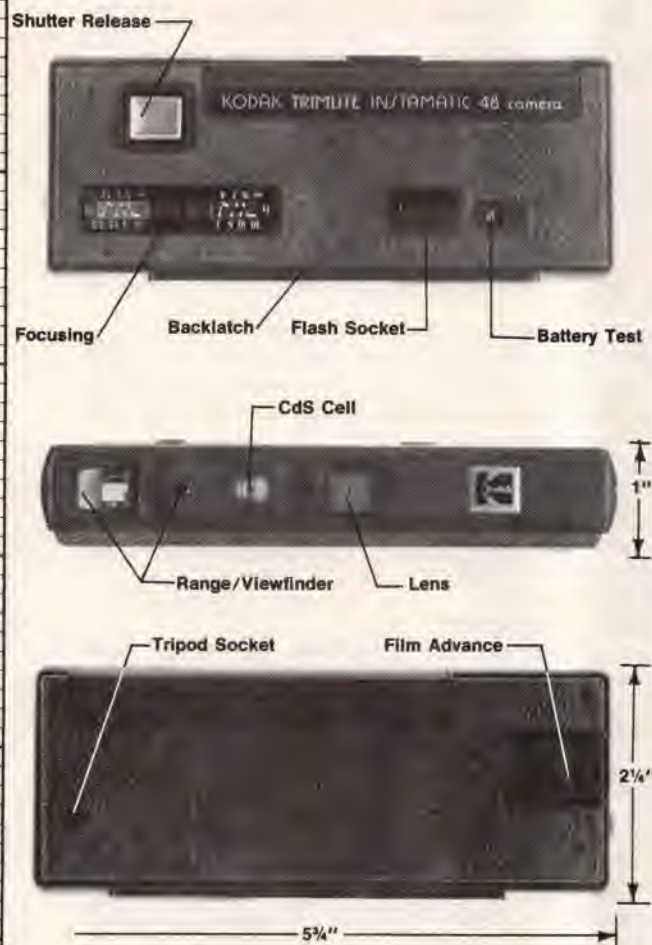
An IBM Copier II in good adjustment does equally well with matte or gloss prints. Should successive degenerations begin to develop bands of light and dark, save your dimes and find another Copier II. If white spots develop due to imperfections on the internal drum, these can be easily retouched by dotting with a pencil until the spots blend in with surrounding areas. Similarly, black dots or entire areas of the photocopy may be removed with any white opaque such as gesso or even typewriter correction fluid.

Possible applications of this technique include sandwiching with other high contrast negatives or with color transparencies, printing onto litho film for exotic posterizations and so on. On a more basic level, objects can be placed directly on the photocopy for interesting photogramlike effects. As usual, imagination is the only limiting factor. So quit blaming earth tremors, bizarre film fungi and other cosmic acts for your poor prints. Rejuvenate them and your self-esteem through Degenerate Interpretation. □

1.-6. This series shows the step-by-step degeneration of a normal print. Original photograph taken with Pentax Spotmatic and 35mm SMCT lens; Kodak Plus-X Film, exposure 1/60 at f/3.5. IBM Copier II used for degenerated images. The final degraded print was cropped and rephotographed onto High Contrast Copy Film with 50mm SMCT macro lens on a copy stand.

Photographic's SPEC SHEET

KODAK TRIMLITE INSTAMATIC 48.



TYPE: 110 cartridge-loading

LENS: 26mm f/2.7-19.5 Ektar

SIZE: 5 1/4" long x 1" high x 2 1/4" deep (146mm x 25.4mm x 57mm)

WEIGHT: 8.9 oz. (252.3g)

BASIC PACKAGE: Camera, wriststrap, battery and set of monograms

PRICE: \$145.95

DISTRIBUTOR: Eastman Kodak Company, 343 State Street, Rochester, New York 14650

FEATURES

Viewfinder: Projected frame with parallax correction marks; rangefinder focusing spot and red light long-exposure warning lamp. Frame coverage is approximately 95 percent.

Lens Construction: Four-element color-corrected with glass protective cover.

Focusing: Rangefinder coupled to continuous slide control on top of camera; range is three feet to infinity.

Close-Up Capability: None

Shutter: Two-blade electronically controlled with speeds from 1/30 to 1/250.

Shutter Lock: None

Exposure Meter: CdS-programmed EE operates on one four-volt battery.

Exposure Programming: In bright-light conditions, shutter operates at 1/250 with aperture at f/19.5; as light diminishes, aperture opens to f/2.7. Once this point is reached, the shutter speed begins to drop to its low level of 1/30. Exposure range with ASA 64 film is EV 8 to 16.5.

Flash Synchronization: Exposures below 1/30 at f/2.7 activate red warning lamp in viewfinder with slight depression of shutter release; this signals need for tripod support or use of flash. When flash is inserted in camera, flashmatic system adjusts aperture and shutter speed automatically by focusing. Flash range is three to 30 feet.

Battery: One size K.

Battery Check: Battery test button (green) and light (red) located on top-left end of camera.

Film Advance: Two-stroke, thumb-activated, sliding-type with automatic return and double-exposure prevention built-in.

Self-Timer: None

Cable-Release Socket: None

Tripod Socket: Located on bottom-left end of camera opposite film advance.

Accessories: Kodak Ektron electronic flash, model B; Kodak FlipFlash extender and Kodak clip-on pouch case.

COMMENTS

The Trimlite 48 is the top-of-the-line model of the second-generation Kodak 110 pocket cameras. It features a new FlipFlash socket which utilizes piezo electric contact. This allows the use of off-camera flash with an optional FlipFlash extender accessory to do away with problems such as red-eye and flat-looking head-on flash. The General Electric eight-shot companion FlipFlash provides four more flash exposures than the Magicube, and the Kodak Ektron electronic flash unit model B provides even more flash shooting versatility.

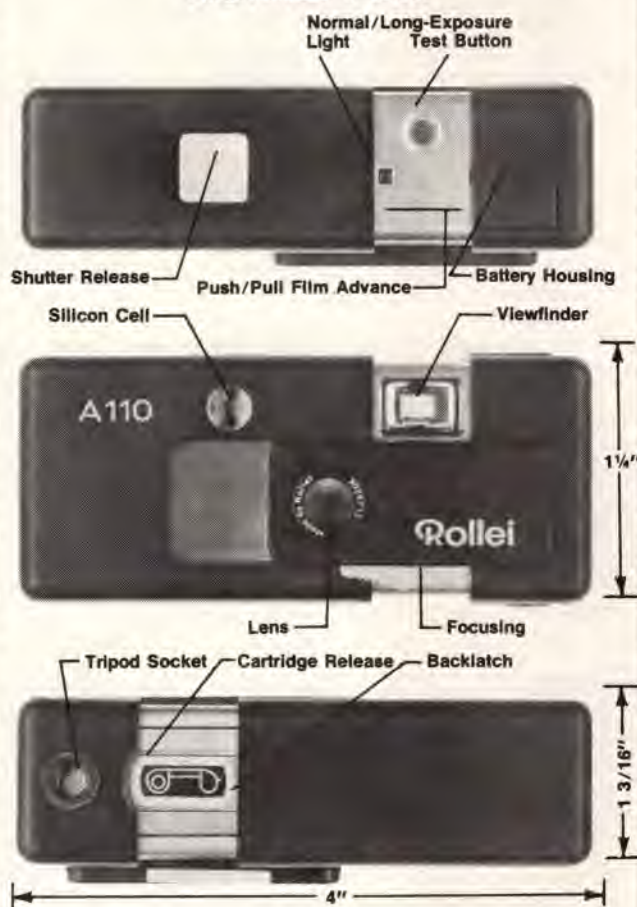
Although lacking a protective lens cover, the Trimlite 48 offers improvements in cutting glare by utilizing a slanted, optically coated front glass cover. In addition, the shutter release mechanism has been softened more than previous Kodak models, though it by no means can be called "soft." The shutter release is also used to activate a long-exposure warning light in the viewfinder when light falls to a level requiring the use of flash or tripod support.

Using the camera under a variety of shooting conditions, the Kodak Ektar f/2.7 lens proved to be a fine performer. This indicates that the Ektar lens design, long known for its outstanding optical characteristics, in conjunction with Kodak's new Kodacolor II color print film, will deliver crisp, clear pictures. The 48 has a textured surface which makes it easy to grip and handle—this, too, aids in producing good results.

The three-year warranty which accompanies the camera is evidence that the Eastman Kodak Company anticipates this model will give long service to serious 110 users. The Trimlite Instamatic 48 is solidly constructed, performs well and should provide many years of use.

Photographic's SPEC SHEET

ROLLEI A110



TYPE: 110 cartridge-loading

LENS: 23mm f/2.8-16 Tessar

SIZE: 4" long x 1 1/4" high x 1 3/16" deep

(100mm x 44mm x 30mm) (open);

3 1/4" long x 1 1/4" high x 1 3/16" deep

(84mm x 44mm x 30mm) (closed)

WEIGHT: 5.25 oz. (185g)

BASIC PACKAGE: Camera with chain and soft case, battery and flashcube adapter

PRICE: \$300

DISTRIBUTOR: Rollei of America, 100 Lehigh Drive, Fairfield, New Jersey 07006

FEATURES

Viewfinder: Optical with bright-frame; includes focus setting above frame and flashing green long-exposure warning light for exposures longer than 1/30. Frame coverage is approximately 80 percent.

Lens Construction: Four elements in three groups. Closing camera positions protective lens shield.

Focusing: Zone, visual distance estimation; continuous slide control on camera face has five settings (3 1/2 feet, head-and-shoulders symbol, six feet, full-figure and landscape symbols).

Close-Up Capability: None

Shutter: Two-blade electronically controlled with speeds from four seconds to 1/400 and short, soft release.

Shutter Lock: None

Exposure Meter: Silicon photo-diode controlled EE operates on one 5.6-volt battery.

Exposure Programming: In "bright-light" conditions, the camera operates at a top speed of 1/400 at f/16. As light falls off, the silicon cell simultaneously controls both aperture and shutter speed until 1/30 at f/2.8 is reached. Below that exposure level, the camera operates at f/2.8 until it reaches its slowest speed of four seconds. Exposure range with ASA 80 film is EV 1 to 17.

Flash Synchronization: Flashing green light with depression of normal/long-exposure test button at speeds slower than 1/30 indicates need for tripod support or flash. Flashcube adapter is attached to left end of camera and electrically fired flashcube inserted. Focus as usual; shutter speed and aperture are automatically controlled by fast-acting silicon cell. Flashcube must be rotated one quarter turn manually to position an unused bulb. Flash range is 13 to 26 feet.

Battery: One Mallory PX-27 or equivalent.

Battery Check: Cock shutter, depress normal/long-exposure test button. If no light appears, battery is exhausted. Battery carrier will only fit into camera in proper position.

Film Advance: Close and reopen camera with a single push/pull action to advance film and cock shutter. Film advance mechanism does *not* operate if no exposure has been made; it also provides double-exposure prevention.

Self-Timer: None

Cable-Release Socket: None

Tripod Socket: Located on bottom-left end of camera; socket also serves as receptacle to attach chain.

Accessories: None

COMMENTS

The most noticeable feature of the Rollei A110 is its extremely compact size, but the list of outstanding qualities of this unit is even more impressive. The use of a silicon photo-diode provides distinct advantages in actual operation. It allows exposure meter controlled flash pictures and, additionally, accurate daylight fill-in flash pictures.

The green light visible on top of the camera and in the viewfinder has been engineered to serve many functions. When the test button on camera top is depressed in situations providing sufficient light for handheld exposures, the light glows continuously. In low-light situations, depressing the test button produces a flashing light. No light indicates that the shutter is not cocked or the battery is bad. The green light is also activated *after* exposure is complete when the shutter release button is depressed. This feature helps avoid photos lost due to moving the camera away from the eye too quickly.

All controls are well located. The shutter has an extremely soft release and, in fact, the camera was built with obvious attention to the smallest detail. The only possible minor frustration during use might be the manual operation of the flashcube. Otherwise, the Rollei A110 is beautifully designed to fit into its handy, compact size and is easy and delightful to use.

BLUEPRINT SERIES

How To Construct a Studio Flat

BY WALT SENG

PROJECT: To construct a studio flat of lightweight aluminum tubing that will support reflectors, diffusion material, backgrounds and can also be used as a light tent.

PURPOSE: To fulfill a need for a flat that is trim, versatile and can be assembled and taken apart easily for transport and storage.

EQUIPMENT: 1. Aluminum drawn tubing No. 3003-h14 (or an equivalent that will not crack during bending—96-inch lengths of .055x $\frac{3}{4}$ -inch inside diameter (ID) tubing (8); 96-inch length of .055x $\frac{3}{4}$ -inch outside diameter (OD) tubing (1); 2. Three-inch bolts with $\frac{1}{4}$ -inch diameter thread (2); 3. Wing nuts for bolts (2); 4. Two-inch bolts with $\frac{1}{4}$ -inch diameter thread and nuts (2); 5. Flat washers for bolts (14); 6. Tubing cutter or hacksaw; 7. Electric drill with $\frac{1}{4}$ -inch bit; 8. Hammer, screwdriver, pliers, stone chisel; 9. Also needed are spring-loaded, jaw-type clamps large enough to hold reflector and other objects in place on the framework of the flat (4).

ASSEMBLY GUIDE: The tubing used in the flat pictured was purchased off the shelf at a hardware store. In other words, the materials for construction are easily found. So don't let the above numbers throw you. They are included only if you need to order the aluminum through a supplier. (Alcoa supplied me with the tubing number, but it might be completely different for another manufacturer.)

The corner braces are made by making a dent in the tubing at the appropriate spot with a hammer and chisel. This is necessary in order to locate the bend accurately and to ease starting the bend. You might try bending the tubing in a vise, but I prefer the "brute-strength" technique as shown in photo No.



1. Just slip long pieces of tubing over the ends of the short piece to give leverage and bend using your knee or the edge of a table. Total construction time is about 1½ hours.

CONSTRUCTION: Begin by cutting the tubing to proper lengths. The $\frac{3}{4}$ -inch (OD) tubing is used to make eight eight-inch lengths and two 10-inch lengths; the $\frac{1}{2}$ -inch (ID) tubing is cut to make one 60-inch piece, two 21-inch pieces, two 48-inch and four 54-inch pieces. You should be left with two 96-inch lengths of tubing and some scraps.

Next bend four of the eight-inch lengths at the center to form a 90° angle. Bend the remaining four to approximately a 75° angle. The two 10-inch pieces must be bent twice to form a U-shaped configuration. To do this, two bends are made at a point

roughly three inches in from both ends of the tubing. See photo No. 2 which shows all the completed corners. It is necessary that all bends be straight and true.

Using a hammer or vise, flatten both ends of the 60-inch length of tubing. The flattened end should be made about 2½ inches long. Now shape the flattened ends to form an L-shaped bend. You can do this by forming it with a hammer over the edge of a 2x4 or, preferably, in a vise. The length of the end of the flattened tube to the bend should not exceed one inch. It is necessary that angles of the bends at the ends of this piece be made in the same direction. This piece is the support strut for the stand which prevents the entire structure from warping and swaying. See photo No. 3 for a look at the strut in place.

With drill make $\frac{1}{4}$ -inch holes midway and all the way through the 96-inch and 21-inch pieces. Next drill a hole through the 10-inch piece. Refer to photo No. 2 for location of hole in U-shaped piece. Using the 21-inch pieces as a guide, drill holes at both ends of the 60-inch tubing. See photo No. 3, which shows the completed assembly.

Begin assembling flat by laying the 96-inch pieces and the 48-inch pieces on the floor to form a rectangle. Connect the four pieces with the 90° corners. The direction of the holes in the long tubing should run parallel to the floor. Tamp the joints to assure a snug fit. The frame is now complete.

Construct the stand by fitting the remaining eight-inch pieces into one end of each of the 54-inch lengths. Connect the 54-inch pieces using the 21-inch lengths. The hole in each of the 21-inch tubings should follow a direction parallel to the 54-inch tubing.

Now crown the open ends of the 54-inch lengths with the U-shaped braces.

Attach the frame to the stand using the three-inch bolts, washers and wing nuts as shown in photos No. 4 and 5. Use as many spacers (washers) as you need to permit the frame to clear the stand when it is spun on its axis. Four washers are used in photo No. 5.

Now attach the 60-inch strut to the 21-inch tubing which makes the bottom of the stand. Connect the pieces with the two-inch bolts. Do not use a washer on the head of these bolts because they must be tightened enough to pull them flush with the tubing; otherwise, the stand will wobble. Take care not to tighten too much, or the heads will pull through the aluminum. Here you do not use the "brute-strength" method—just a nice touch.

This completes the construction except for affixing the diffusion material to the frame. I found the simplest and perhaps best way to do this is with clamps.

GENERAL DISCUSSION: Flats have many uses. They can support reflectors to assist in lighting shadows. Light can be bounced from them to give soft key-light effects. Reflectors can be of shiny, textured, silver or gold material, and even plain white paper will do. Instead of reflecting the light, you can use the flat to support diffusion material through which light will pass and be softened. Matte acetate is good for this purpose.

The flat will function as a light tent by swinging it on its axis and draping it with tenting material. You might wish to use it with the light table featured in "Blueprint" (February, 1975 issue). Painted backgrounds can be supported by the frame. Opaque material can be used to block light from certain areas. Last but not least, the flat was designed to be disassembled easily for storage and portability. © Walt Seng, 1976



1. "Brute-strength" method for bending tubing.



2. Four 90° corners; four 75° corners, and two U-shaped corners.



3. Support strut in place.



4. Frame attached to stand.



5. Wing nuts and washers are used to attach frame to stand.



6. Stand.



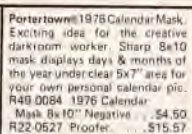
7. Completed frame stand.



8. Frame rotating on its axis.



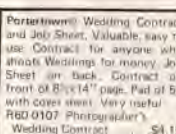
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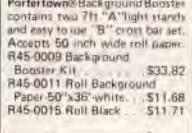
Portertown® Emblem-Inch/Inch large 4" cloth emblem has camera design of black & silver thread on medium blue background. Wild color! Letters & borders. R14-0035 Nikon Embl...\$3.99
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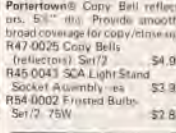
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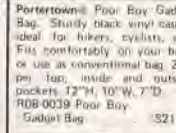
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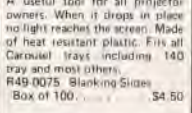
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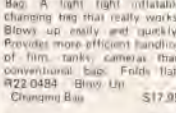
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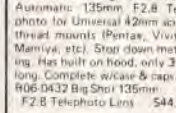
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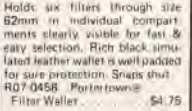
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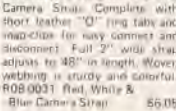
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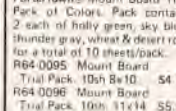
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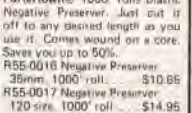
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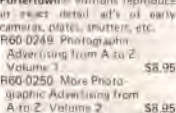
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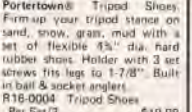
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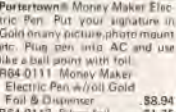
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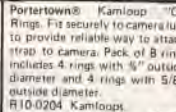
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R10-0036 Eye Cup Canon...\$2.88
R10-0079 Eye Cup Yashica...\$3.20
R10-0080 Eye Cup Konica...\$3.25



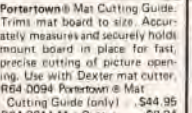
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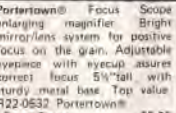
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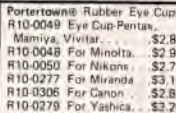
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TOKYO NOTEBOOK

M. A. HADLEY

FAR EAST ROUNDUP



□ By the time you read this, you and I will have every reason to feel like we're treading on soft, fleecy clouds. You because of the many new products that have appeared on your dealer's shelves for the New Year, me for returning home to the states for a vacation for the first time in five years.

Let's survey the local scene for the new equipment in your future. For months now we've all been reading reports about the Contax RTS (Real Time System) and the Carl Zeiss lenses. The first shipments of the system were made in September, and the whole package should go on sale around the time you read this. The lenses will be available in the U.S. from Yashica in Woodside, New York.

Mamiya order books are being filled for through-the-lens finders for the M645, with dealers here expecting those orders to be filled by the time this appears in print.

Elmo's bid for the New Year market is a dual offering—a super 8 sound movie camera and the companion 600S sound projector, the two items selling here for the yen equivalent of \$759.07. Camera and projector feature dual-sound recording, meaning that you can record dialogue and background music (mixing) with the camera and sound-on-sound recording with the projector. Extended reel size capability is a plus factor with the projector.

LENSES GALORE

I knew it could be done, but the realization of a lens with a dual helicoid mount—one that extends from the center, both forward and backward—is being offered by Jaca Corporation, 17-25, 4-chome, Mita, Minato-ku, Tokyo, in their Panagor 1:1 Auto Macro 55mm f/3. Mounts for most name-brand Japanese cameras are available.

Over at Canon there are three new models—the Canon SC Macro 100mm f/4 (SC stands for spectra-coated); the Canon FD 300mm f/2.8 SSC Fluorite, which comes with a 2X tele-extender (and case) that makes it a 600mm f/5.6, perhaps the shortest 600mm in the world, and the Canon FD 400mm f/4.5 SSC. The last model has near-focus ca-



pability through utilization of rear-group focusing, a system that works like most zoom systems, through cams instead of the normal helicoid. All are full-aperture metering cameras with AE (automatic exposure or EE) capability. The two longer focal lengths have rear filter mounts. Dollar equivalents for yen prices are respectively, \$246.71, \$1381.57 and \$641.44.

Sigma is coming out with the new Sigma Z 135mm f/2.8 Pantel which boasts increased depth-of-field capability with the addition of a click-stop indicating f/64.

Allimatsu Corporation, C.P.O. Box 2079, Tokyo 100, now offers two compact-design enlarging lenses in black mounts, a 35mm f/3.5 and 135mm f/4.5, under the Soligor brand name. Both feature amber coatings and come with Leica screw-thread mounts. The 35mm and 135mm models have similar lens construction, with three elements in three groups. Weights are, respectively, 60 and 120 grams.

Maruwa Co., Ltd., 6-7, Uchikanda 2-chome, Chiyoda-ku is offering six new Super Marexar automatic lenses, a 100-200mm f/5.6 zoom, 300mm f/5.6, 135mm f/2.8, 35mm f/2.8, 20mm f/3.5 and 28mm f/2.8.

Being a former advertising salesman, I've often countered the old excuse of, "We cannot afford to advertise," with the older still bromide, "You cannot afford *not* to advertise." Therefore, it warmed my heart to see a two-year-old

optical company make a determined bid for attention with a two-page, double-truck, center spread in full color in one of Japan's leading English language trade papers. Makina Trading Co., Ltd., was advertising Makinon Auto lenses made by Makina Optical Co., Ltd. Both are located at 29-3, 2-chome, Kita-Senzoku, Ohta-ku, Tokyo 145.

Returning to Yashica, I learned that six Carl Zeiss lenses will be immediately available—the Carl Zeiss Planar 50mm f/1.4 as the standard; the 25mm f/2.8 and 35mm f/2.8 in the wide-angle range; the 85mm f/2.8 and 80mm f/4 in long focus, and 135mm f/2.8 in the tele group. Soon to come is a 15mm f/2.8 full-format ultra-wide-angle (I was shown some fantastic results achieved with this particular gem) and the 15mm f/3.5 fisheye, which is no slouch in the same department. All are T-Star (T*) coated for ultra-flat light transmittance at all wavelengths. Look for others as they become available in your area.

Not too many fisheye lenses make their appearance in the course of a year, so my ears perked up when Minolta bared their 7.5mm f/4 here on October 21, 1975, backing up their recently marketed 17mm with the same maximum aperture. This fixed-focus, 180° lens is made up of 12 elements in eight groups, has acromatic coating and six built-in filters—the 1A, 85, 80B, R60, Y52 and FLD (fluorescent, daylight film). It provides a circular image. U.S. retail list is \$660.

At Canon I learned that their new 310XL, a lightweight super 8 job, has reflex focusing and viewing through a 3:1 ratio f/1 zoom lens. Metering is via an external CdS cell. It should be new on your dealer's shelves at this time.

PRO TIP

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BICENTENNIAL NEWS

The American Bicentennial Photographic Exposition, "The American Photographer 1839-1976," is now open to all American citizens. Photographs by living photographers must be submitted by maker; if the maker is no longer living and you own rights, you may submit that entry. Entries must show some aspect of the American way of life. There is no limit to the number of entries and no charge for submissions.

Any type of photographic print (up to 16x20) or transparency and even photo albums can be entered. Package material securely; clearly indicate your name and address on each entry and include a sturdy, self-addressed, stamped return mailer.

Closing date is February 22, 1976; send entries to American Bicentennial Photographic Exposition, Government P.O. Box U.S.A., Bethesda Station, Washington, D.C. 20014. Selected works will be exhibited throughout U.S. and abroad; a commemorative book will also be published.

The Floating Foundation of Photography invites photographers from all over the U.S. to participate in **E Pluribus Unum/From Many One**—an American photography contest and mixed-media exhibition which will tour the U.S. and the world. Submissions should represent the American experience based on the theme title; they can be either black-and-white photos or color slides. Prints must be unmounted, un-

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Check or money order for \$5 should accompany work entered in each category; photographer's name and address should be on back of each print or on slide mount. If you want work returned, it should be accompanied by a self-addressed, stamped envelope. Deadline is January 31, 1976; send entries to EPU/The Floating Foundation of Photography, Box 480 Mossybrook Road, High Falls, New York 12440.

Status of the States, a Pictorial Portrait of U.S. in 1976 is being sponsored by the *Colorado Photographic Arts Center*, 1301 Bannock Street, Denver, Colorado 80204. Deadline is February 29, 1976.

Prints and transparencies can be submitted in seven entry categories—people, ecology/scenery, architecture, transportation, recreation, the arts and industry. All prints must be exhibition-mounted and signed and dated inconspicuously on the front. Name, address and pertinent information must be printed on back of each print or on slide mount. All entries should have been taken since January 1, 1970. \$1000 in prize money will be awarded. For entry material write Colorado Photographic Arts Center.

Please address all submissions and releases for "Bicentennial News" to Bicentennial Editor, c/o Petersen's PhotoGraphic Magazine, 8490 Sunset Blvd., Los Angeles, California 90069.

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2. Date of filing: Sept. 19, 1975
3. Frequency of issue: Monthly
3a. Annual subscription price: \$9.00
4. Location of known office of publication: 8490 Sunset Blvd., Los Angeles, CA 90069
5. Location of the headquarters or general business offices of the publishers: 8490 Sunset Blvd., Los Angeles, CA 90069
6. Names and addresses of:
Publisher: Brent H. Salmon, 8490 Sunset Blvd., Los Angeles, CA 90069
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Managing Editor: Karen Gelter, 8490 Sunset Blvd., Los Angeles, CA 90069
7. Owner: Petersen Publishing Co., 8490 Sunset Blvd., Los Angeles, CA 90069
8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None
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	Average No. Copies Each Issue During Preceding 12 Months	Actual Number of Copies of Single Issue Published Nearest Filing Date
A. Total no. copies printed (Net Press Run)	290,047	313,074
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	101,468	106,754
2. Mail subscriptions	76,864	94,980
C. Total paid circulation	178,332	201,734
D. Free distribution by mail, carrier or other means		
1. Samples, complimentary, and other free copies	1,178	1,172
E. Total distribution (Sum of C and D)	179,510	202,906
F. Copies not distributed		
1. Office use, left-over, unaccounted, spoiled after printing	9,333	7,351
2. Returns from news agents	101,204	102,817
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(Continued from page 26)

CONTEST NEWS

The 63rd Pittsburgh International Salon of Photographic Art, sponsored by The Photographic Section of the Academy of Science and Art is accepting entries in both black-and-white and color and is open to all photographers. Deadline for print submissions is February 24, 1976; closing date for slide entries is February 10, 1976. For entry forms and further information write to Mrs. Charles L. Hissem, 1046 East End Avenue, Pittsburgh, Pennsylvania 15221.

* * * *

The Thomas Performing Arts Hall Association invites all photographers to enter their black-and-white and color prints and color slides in a competition entitled, "Photography as a Performing Art." More than \$5000 in prizes will be awarded, and winning entries will be considered by the U.S. Post Office Department for a U.S. commemorative postage stamp. Write to Irving J. Olson, Chairman, Edwin J. Thomas Performing Arts Hall, The University of Akron, Akron, Ohio 44325, for application blanks and further entry requirements.

* * * *

January 19, 1975 is the closing date for entry of prints and slides in the Teaneck International Exhibition of Photography, sponsored by the Teaneck Camera Club. The theme of the contest is "Man and Man's Environment." Write for entry material to Teaneck International Exhibition of Photography, Town House, Teaneck, New Jersey 07666.

* * * *

The theme "Man and Man's Environment" is also that of the Sixth International Salon of Photography sponsored by the Mid-Missouri Camera Club; closing date for all entries is February 21, 1976. Write to MMCC Salon of Photography, 12 North Tenth, Columbia, Missouri 65201, for entry materials and requirement details.

* * * *

The 40th Rochester International Salon of Photography is now accepting color slides and prints and black-and-white prints in various categories such as, contemporary, photojournalism and nature. Deadline for all submissions is February 2, 1976. Write to Rochester International Salon, Memorial Art Gal-

lery, 490 University Avenue, Rochester, New York 14607, for entry information and special mailing labels.

* * * *

The Color Camera Club of Westchester, Inc., presents the 19th Westchester International Color, Nature & Photojournalism Slide Exhibition which is open to all photographers with a simple fee payment. Slides may be entered in any of the three categories listed. Write to the 19th Westchester International, c/o William Thomsen, Jr., 374 Reed Avenue, Crestwood, New York 10707, for entry materials; deadline for all submissions is March 31, 1976.

* * * *

The Adelaide Festival of Arts International Exhibition of Photography is sponsoring the Australian "Exhibition of the Year." Called Interphot 76, black-and-white and color prints will be accepted in the following categories: pictorial, nature, contemporary, photojournalism; transparencies are accepted in the same areas. The festival will be held from March 6 to 20, 1976 at the Freemasons Hall in Adelaide, South Australia. Closing date for all entries is February 6, 1976; particulars and entry forms available by writing to Interphot 76, P.O. Box 189, Norwood, South Australia 5067.

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(Continued from page 23)



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1975 YEARLY INDEX

This index of PhotoGraphic's editorial content will serve as a guide for locating articles of interest. For information on back issues, please see page 89 or write Petersen Publishing Company, Retail Sales Department, 6725 Sunset Boulevard, Los Angeles, California 90028.

KEY TO COLUMN TITLE ABBREVIATIONS

Book Reviews, listed by book title.....	(BR)
Camera on Campus, Routh.....	C
Club Close-Ups, Yarfitz.....	CC
Focus, Kruse-Smith.....	F
Guide Lines, Farber.....	GL
Light Reading, Cornfield.....	L
110 Photography, Lahue.....	O
One to One, Brooks.....	OO
Point Source, Rosenbaum.....	P
Self-Assignment, Helprin.....	S
Tokyo Notebook, Hadley.....	T
The Vintage Viewfinder, Lahue.....	VV
Where the Action Is, Sutton.....	A

MONTH PAGE

BLUEPRINT

How To Construct a Darkroom Air Compressor, Wilson.....	December	57
How To Construct a Film Drying Cabinet.....	March	43
How To Construct Folded Paper Chemical Scoops, Yob.....	November	45
How To Construct Inexpensive Diffusion Filters, Seng.....	May	55
How To Construct a Light Table, Seng.....	February	25
How To Construct a Perspective Control Easel Base, Seng.....	April	61
How To Construct a Product Chair.....	January	33
How To Construct a Shadow Densitometer, Blow.....	July	43
How To Construct Variable Contrast Lighting Equipment.....	October	21
How To Construct a Wallet Printing Easel, Bonnell.....	August	75
How To Extend the Range of VC Filters.....	September	27
How To Test for Shutter Consistency, Yob.....	June	23

DARKROOM

Beyond Posterization, Brooks.....	February	32
Bye-Bye Color "Blues," P.....	September	20
Cameraless Photography, Burchfield.....	January	36
The Carbo Process, Derkacy & Jones.....	July	70
Cards: Quick & Easy, Geller.....	November	64
Cibachrome, Brenner.....	April	32
The Darkroom Is Alive and Well, P.....	July	10
The Developograph, Farber.....	March	80
Don't Look Now, But..... GL.....	May	8
Duo-Tone Solarization, Lynne.....	May	50
Guerrilla Tactics in the Darkroom, GL.....	June	6
A Guide to Resin-Coated Papers, Brooks.....	September	49
Intensification, Reduction and Toning, Brenner.....	January	75
Kodak's Miracle Developer, Brenner.....	July	30
A Little of This, A Little of That, GL.....	October	6
Meter the Negative, Farber.....	December	47
New Realities, Marut.....	May	73
Nostalgia in the Darkroom, Honigsfeld.....	September	36
One-Shot E-4 Processing, Brooks.....	October	45
Photo Impressionism, Colmano.....	March	70
Printing Craftsmanship, P.....	August	12
Print Like a Master, Yob.....	October	36
"R" Color Prints the Way You Like Them, Brooks.....	December	78
Test Strips—Trial by Exposure, P.....	December	8
The 3c (Two-for-a-Nickel) Enlarging Meter, Picker.....	August	78
Vital Volts from Vlvex, GL.....	March	6

EDUCATION

An Administrator Speaks, C.....	January	14
And in This Corner, the Photo Workshop, C.....	August	20
"... And Your Eyes Will Pop Out," S.....	August	14
Breaking Preconceptions, S.....	March	8
Brother Can You Spare a Lens?, C.....	September	16
Contrasting Reference Points, S.....	October	30
Filling a Need, C.....	May	12
Four Dill Pickles and a Cup of Cocoa, S.....	September	14
Grading? It's Up to You, C.....	April	12
Henry Holmes Smith, C.....	October	26
Hidden Modifiers, S.....	May	20
"It's Not How but What We Teach," C.....	July	20
Light's Expressive Quality, S.....	December	6
Light Is a Law, S.....	November	16
Locked Knees, Atrophied Elbows & Bull's-Eye Vision, S.....	June	82

MONTH PAGE

Make Photos, Not War, C.....	November	22
The Persistent Fox, S.....	July	16
Seeing Pictorially, S.....	April	20
Stimulating Assignments, C.....	March	17
A Tale of Two Teachers, C.....	June	13
The Teaching of a New Language?, Routh.....	October	80
What Textbooks Leave Out, C.....	December	22
Why Teach Photography?, C.....	February	24

GALLERY '75

Ahnert, Gerald.....	May	71
Allen, John E.....	January	26
Alvis, Gary.....	July	47
Bade, Michael.....	October	42
Baggerly, Roy C.....	September	77
Beckett, Bruce.....	March	61
Brust, James.....	December	89
Carabetta, Ralph.....	October	42
Clark, Thomas.....	January	27
Corley, Carl.....	April	75
Cutler, Peter.....	March	60
Daniels, Robert E.....	June	76
Darby, Brad.....	January	26
Dollmeyer, Scott.....	August	47
Drugos, Robert.....	February	62
Duckworth, Charles.....	June	76
Escher, John R.....	October	42
Fishback, Kurt E.....	September	76
Ford, Terence.....	November	82
Gay, Gary G.....	February	63
George, Steve.....	November	83
Gibbs, James.....	September	76
Goldman, Steven.....	December	89
Hanzel, Ed.....	March	60
Heffner, Sherry.....	April	75
Hill, John B., Jr.....	December	88
Hodara, Paul.....	April	75
Holmes, Scott.....	July	46
Hunold, Ray.....	May	70
Insham, Kurt.....	November	83
Keller, Michael.....	July	46
Keresztes-Fischer, Béla, Jr.....	January	27
Klaine, John Kent.....	April	74
Klutz, Bryan.....	April	74
Lamana, Gemma.....	June	77
McClellen, Michael.....	November	82
McDonnell, Robert J.....	May	70
Marcus, R.....	October	42
Melgar, Fabian.....	November	83
Meyers, Richard.....	March	61
Michaud, A.....	August	46
Miller, Paul.....	August	46
Morris, James.....	August	47
Morrison, Don P.....	January	26
Newmark, Dan.....	December	89
Olsen, Gary W.....	March	61
Orrell, Derek.....	September	77
Pantano, John.....	December	88
Paton, George.....	July	46
Plank, Christie.....	July	47
Rebello, Rod.....	May	71
Sanchez, Flavio.....	August	46
Schaffeld, Mark.....	May	71
Silverman, Jay.....	September	77
Stroud, Dan.....	February	63
Trudgen, James.....	February	63
Tucker, Tom.....	June	76
Watson, David L.....	October	43
Weinberg, Carol.....	June	77
Wickham, Reginald.....	February	62

GENERAL INTEREST

Advertising Index.....	Monthly	
As the Kardon Lived, So the Ektra Died, VV.....	January	92
Backup Equipment, A.....	November	126
Be a Show-Off, CC.....	April	22
Big Story, T.....	October	90
Bringing It All Back Home, CC.....	August	18
Brush, Bottle or Blower?, Lahue.....	December	61
Camera Supports, Lahue.....	February	80

	MONTH	PAGE
Case Histories of Picture Sales, A.....	March	90
Chrome to Black: The Tamron Story, T.....	November	128
Clarion Call, T.....	May	96
Club Organization—Following a Good Example, CC.....	July	85
The Cologne Letters, Cornfield.....	January	54
Control What Your Camera "Sees," O.....	September	92
Custom Labs, A.....	December	110
Darn Clever, Those Aussies, or The Latest from Down Under, O.....	June	88
Discovering Graphic Design in Nature, Brooks.....	June	26
Don't Just Sit There, Do Something!, CC.....	September	12
Don't Knock Uncle Sam, O.....	November	122
Eastern Trends, T.....	January	8
An Explanation of an Explanation of an Explanation, GL.....	April	6
Filters for Effect, O.....	April	21
First-Year Roundup, CC.....	October	10
Future Shock, T.....	March	22
A Group That's Really Going Places, CC.....	January	18
Hardware Maintenance—It's a Must, F.....	January	22
Hints for Better Holiday Pictures, O.....	December	114
Honeywell's Universal Repronar, GL.....	February	6
The Horn Blew at Midnight, O.....	May	82
How-To's of Print Mounting, CC.....	March	18
How to Purchase a Camera, A.....	April	86
Hunting with a Camera, L (BR).....	February	22
The ICP Library of Photographers, L (BR).....	January	91
Ideas to Make Photography Easier, Yob.....	May	66
If It's Tuesday, It Must Be Topcon, GL.....	September	8
In Praise of the Lowly Snapshot, Jacobs.....	December	91
In Search of the Holy Grail, Lahue.....	July	77
Instant 4x5s, Polaroid's Large Format Films, Cornfield.....	August	58
Is State Licensing of Photographers Coming?, OO.....	October	96
Is Your Club a Turn-Off?, CC.....	February	29
It's Anniversary Time Again, VV.....	February	92
Looten's Eighth Edition, P (BR).....	October	12
Macro-Photography that Sells, Gall.....	October	62
Magazines—When Do They Pay?, A.....	October	88
Many Markets for Your Photos, A.....	August	84
Market Research, A.....	June	80
A Mini-Tour, T.....	February	20
The Motor Drive Boom, A.....	May	92
New and Improved, GL.....	December	18
Now You See It, Now You Don't, GL.....	November	30
Obituary for the Nikon F?, T.....	June	90
Old Molds Never Die, Lahue.....	November	94
Olga Parker—Where Are You Now That I Need You?, O.....	March	86
One Great Shot Doth Not a Professional Make, A.....	February	95
On the Scene.....	Monthly	
One to One, (Readers' questions answered) Jan. to Sept., Brenner.....	Monthly	
Other Voices, (Reader letters).....	Monthly	
110 Available Light Photography? You're Kidding!, O.....	August	22
Photographers Vs. F.A.A., Brenner.....	May	38
Photographing a Queen, T.....	August	90
The Pin-Up From 1852 to Now, L (BR).....	February	22
Polarblad or Hasselroid? You Name It, GL.....	January	6
A Portrait of American Life—1976, CC.....	June	18
Posed Vs. Candid, Cornfield & Jacobs.....	April	68
Preserving Nostalgia, Rosenbaum.....	December	98
Product Proof Sheet, (New products).....	Monthly	
Q & A from A to Z, Geller.....	September	78
Refocus Celebrates Womanview, F.....	February	14
Rehabilitation Photography, A Purpose, CC.....	November	14
Regula I Love You, O.....	July	90
Riding a Jinx, T.....	July	92
Rocket's Red Glare, T.....	April	82
The Rural Marketplace, A.....	July	18
A Sense of History, CC.....	May	18
Shooting Under the Big Top, Brainen.....	May	42
The Sigma Story, T.....	September	94
Sky High Line, T.....	December	106
Something Old, Something New, Something Borrowed, CC.....	December	20
Sports Photography for the Amateur, Bodow.....	March	62
Third Anniversary Retrospective, A.....	September	86
Trivigraphy: A New Collector's Craze, GL.....	August	10
The Ultimate Assignment, Jacobs.....	March	55
Using Auxiliary Lenses to "Zoom In" on Your Subject, O.....	October	84
What the Camera Sees and You Don't, Kruse-Smith (Interview with F. Bez).....	January	68
What Color Is Saturday?, Cornfield.....	January	61
Where the Girls Are, OO.....	November	132
1974 Yearly Index.....	January	97
HOW-TO PROJECTS		
Aviary in the Studio, Hoffman.....	November	74
Build Your Own Mini-Background, Yob.....	September	45
Creative 110, Lahue.....	January	42
How To Build A Super-Macro Camera, Golden.....	October	74
How To Make Rembrandt Masks, Yob.....	July	36
Microfilm Recording for Everyone, Yob.....	November	112
3-D Photography on a Shoestring, Riley.....	June	71
360°, Stanley.....	February	64
MOVIES		
The Case for Black-and-White, F.....	March	14
Editing—The Basics, F.....	May	16

	MONTH	PAGE
The Five C's of Cinematography, F (BR).....	September	24
Good News From the LA Cinematheque, F.....	October	24
A Grab Bag of Super 8 Goodies, F.....	December	24
Kinestasis—Putting Stills in Motion, F.....	June	20
Laying A Firm Foundation, F.....	November	18
Mascelli's Cine Workbook, F (BR).....	September	24
Onward and Upward in Home Movies, Derks & Poster.....	March	74
Painting on Film, Kruse-Smith.....	October	56
Pixillation: The Animator's Abracadabra, F.....	August	24
Sound Cameras You Can Afford from GAF, F.....	April	18
Time-Lapse Movies—Exploring the Cosmos With Super 8, F.....	July	12
PORTFOLIOS		
Stan Fazakerley: The Santa Monica Pier.....	March	45
Gary Krueger: Visions of the Concrete Landscape.....	June	40
Mike LaCroix: Guerrilla Tactics, Cyr.....	July	60
Brian Leatart: Outtakes.....	August	65
Ron Mesaros: Surprises.....	April	42
Susan Maria Nyerges: Woman Woman.....	November	85
Paul Paree: Vita E Morte.....	December	70
Ave Pildas: Halloween Hollywood.....	October	66
Rosamond Wolff Purcell: A Matter of Time.....	May	58
Paul Slaughter: Sketches of Jazz.....	January	46
Robert Walker: Imaginings.....	September	68
David Williams: Formalization.....	February	47
PHOTOGRAPHIC'S PRIMER SERIES		
Color Printing, Part 9, Rosenbaum.....	November	102
Film Processing, Part 7, Yob.....	April	50
Lenses: The Tools, Part 6, Stewart.....	February	54
Printmaking, Part 8, Yob.....	June	48
SPEC SHEET		
Asahi Pentax KM.....	December	35
Asahi Pentax K2.....	November	49
Canon 110 ED.....	September	18
Contax RTS.....	October	34
Cosmorex SE.....	October	33
Pocket Fujica 600.....	September	17
Hasselblad 500C/M.....	March	25
Honeywell Auto/Strobonar 470 Electronic Flash.....	January	60
Konica Autoreflex A-3.....	February	71
Kowa Super 66.....	March	26
Leicaflex SL2.....	February	72
Mamiya RB67 Pro-S.....	November	50
Minolta Auto Electroflash 450.....	April	39
Minolta Pocket Autopak 70.....	July	76
Minolta XE-7.....	June	68
Miranda dx-3.....	June	67
Miranda RE-II.....	May	25
Nikkormat FT2.....	August	29
Ricohmatic 110X Pocket Deluxe.....	July	75
Sunpak Auto 511 (flash).....	April	40
Topcon IC-1.....	August	30
Vivitar 292 Auto Electronic Flash.....	January	59
Vivitar 450/SLD.....	May	26
SPECIAL EFFECTS		
Colorgraphics, Bodow.....	August	54
In-Camera Masking, Zuckerman.....	September	40
It's In the Bag, OO.....	December	118
The Magical World of Infrared Photography, Brenner.....	June	34
Multiple Exposure, Multiple Exposure, Multiple Exposure, Brenner.....	August	38
Photo Silhouettes, Rosenbaum.....	October	52
Transcendental Images, Powers.....	April	63
STUDIO		
Cheap Backlighting and Other Thoughts, LR.....	October	28
Imaginative Portraits Are Legal, Y'Know, LR.....	August	87
The Joys of Slavery, LR.....	September	22
Light Control the Easy Way, LR.....	April	8
Memory Lane: Fashionable Location for Your Studio, LR.....	June	16
Sekonic's Spoiling Us Again, LR.....	March	12
Tough Luck, Jim, GL.....	July	6
Tower of Power, Brooks.....	November	56
Triple Takes, Mitchell.....	April	76
Weapons Against the Invisible Enemy, LR.....	July	8
A Welcome Newcomer, LR.....	May	14
PHOTOGRAPHIC'S TECHNICAL INDEX		
Alignment Chart to Correct Exposure for Lens Extension, Yob.....	December	32
Darkroom Chemicals & Substitutions, Part 1, Yob.....	May	22
Darkroom Chemicals & Substitutions, Part 2, Yob.....	July	22
Microdol-X and Substitute Formulations with Ilford Films, Yob.....	March	68
Weights and Measures in the Darkroom, Yob.....	January	82
TECHNIQUES		
Bird-Watcher's Notebook, Tremaine.....	September	58
Close-Up Lighting, Irwin.....	August	34
Close-Up Photography, Lieberman.....	March	34
Corrective Portraiture, Cornfield.....	February	75
The Elusive Bubble, Braendle.....	December	40
Fill-In Flash, Cornfield.....	June	60
Haze Penetration, Charest.....	August	50
The Lo-o-o-o-ng Exposure, Brenner.....	February	40
Natural Flair, Lippl.....	July	52
The Outdoor Studio, Gunn.....	May	30
Shadow Play, Lippl.....	March	83
Thanksgiving At Your House? Save a "Spot" for Me, P.....	November	40

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From slide

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slide \$

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slide \$

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Fujicolor — GAF — Kodacolor II

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Postage & Handling Add 10% (Min. .40) .. \$

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on ☐ SILK or ☐ SEMI-GLOSS PAPER

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ADVERTISING INDEX

Aetna Optix, Inc.	31
Agnekolor, E.P.O.I., Inc.	13
American School of Photography	91
Artography Academy of Photographic Arts	98
Asanuma Corp.	7
Associated Photographers International	88
Beseler Photo Marketing Co., Inc.	5, 37
Bogen Photo Corp.	32, 48
Bridal Studios	98
Brooks Institute of Photography	28
Calumet Photographic, Inc.	80
Calypso Color Labs	89
Camcon, Camera Control Corp.	92
Canon USA, Inc.	17, 42-43
Celestron Pacific	21
Continental Photo Corp.	89, 91
Creative Arts Photography	89
Creative Framcrafters	91
Creative Photography	98
Crown Products	
Div. Chilcote Co.	98
Custom Quality Studio	94
Da-Lite Screen Co., Inc.	31
Eastman Kodak Co.	Cover 4
Edwal Scientific Products	92
Elmo Manufacturing Corp.	33
Ethol Chemicals	92
Fishback School of Photography	88
Fuji Photo Film, U.S.A., Inc.	14-15
Gaynor Research Co.	27
Gemini Photographic	98
Gossen	
Div. Berkey Marketing Co., Inc.	87
Peter Gowland Productions	51
Graphic Imports, Inc.	88
Hidalgo Supply Co.	73
Honeywell Photographic Products	25, 66-67
The H & W Co.	51
Industrial Photo Art	98
Interstate Color Lab, Inc.	97
Kalt Corp.	89
Konica Camera Co.	
Div. Berkey Marketing Co., Inc.	68
Larson Enterprises	51
Leedal, Inc.	92
E. Leitz, Inc.	90
Maxwell Photo-Mural Tanks	98
Meisel Photochrome Corp.	90
Minolta Corp.	31
Mornick Div.	
Cosar Corp.	31
National Camera	
Technical Training Div.	86
Nikkormat, E.P.O.I., Inc.	Cover 2
Nikon School, E.P.O.I., Inc.	77
Pfefer Products	18
Photography Learning Systems	18
Portertown Products, Inc.	85
Positive Color Professional Labs	93
Professional Photographers West	98
Pro Photo	93
Rhode Island School of Photography	98
Rockland Colloid Corp.	98
Rollei of America	27, 33, 87, 90
Ed Romney	92
Samigon	
Div. Argraph Corp.	21
The School of Modern Photography	8-11
Science Dimensions	93
Shutterbug Ads	98
Sigma, E.P.O.I., Inc.	22, 23
Stormy Dawn Color Lab	91
Studio W	73
Time-Life Books	19-20
Unicolor, Photo Systems, Inc.	Cover 3
Vantage Press, Inc.	98
Verian Industries, Inc.	92
Vivitar Darkroom Accessories	
Ponder & Best, Inc.	29
Vivitar Lenses, Ponder & Best, Inc.	3
Wolfe Worldwide Films	98
Zone V	98

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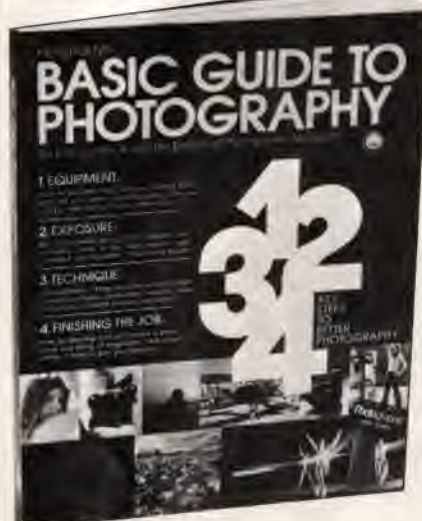
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WHY DO IT THE HARD WAY?

The other day a model visited my studio carrying a portfolio featuring many of your photographs. Needless to say, you made her look beautiful.

Like most photographers who shoot primarily 35mm, I am constantly trying to improve my black-and-white print quality. When the model confided that the 2¼-looking prints were really from 35mm, I was astounded. What are you doing to get such fantastic quality?—Alan Bergman, Los Angeles, California.



□ Your letter is very complimentary, Alan, but I'm afraid I can't take the credit. The print quality you refer to is attributable to the films, developers and papers I use and the companies that produce them. If I may take a short, historical detour first, I will then get down to the nuts and bolts of my easy way to produce quality 35mm black-and-white photographs.

During the heyday of photojournalism, when lenses and films were slower, Kodak Tri-X Film became the choice of top photographers of that era. The mystique that came to surround Tri-X and other fast black-and-white films continues even today—despite reason. Is it reasonable to choose a fast black-and-white film to photograph the same subject that is being exposed with Kodak Kodachrome 25, known for its inherent fine grain and resolving power? If there is sufficient light to use a film with a speed of 25 to make color photographs, why a photographer would use a black-and-white film with a speed of 400 in the same situation goes beyond logic and back to "the mystique."

That the black-and-white films with speeds comparable to the most popular color films will produce excellence with ease is due to many factors, few of which can be easily quantified. Since film speed is measured numerically, it is too commonly assumed to be a measure of all aspects of quality. The ability of film, however, to record subtleties of tone gradation and to define detail crisply in both shadow and highlight areas in a print that has overall brilliance cannot be quantified readily. All these attributes, plus fineness of grain

and resolving power, must be present in the negative for the print to have the appearance of quality.

Another factor in black-and-white quality that has received far too little attention is the effect of particular developers on a negative's characteristics. How those characteristics match the characteristics of the paper is of equal importance to print quality. Of the three manufacturers supplying films that are relatively slow, fine-grained and capable of the highest negative quality—Eastman Kodak (Panatomic-X), Adox (KB 14 and KB 17) and Ilford (Pan F)—Ilford must be commended for the amount of attention paid to matching the characteristics of their film, film developer and paper.

Even with Ilford there is a choice of developers that requires some testing. The developer for Pan F film that seems to produce the best balance of fine grain, shadow detail, sharpness, tonal gradation and brilliance is Ilford Microphen developer. When using Microphen I recommend a one-part developer, one-part water dilution to avoid uneven results from too short developing time. The manufacturer's recommended times and temperatures are reliable starting points, with some adjustment for subject contrast and optical effects requiring some compensation.

Adox has a well-deserved reputation with older photographers, since it was the first super-fine-grain film available to the 35mm enthusiast. Burke & James should be thanked for making these films available again. The developers commonly used in Europe for Adox films are largely unavailable in the U.S. Times and temperatures provided with the film are for D-76 1:1 or Rodinal.

With the slower KB 14 the contrast potential, when developed in D-76, was of some concern to me, so I did some testing with Kodak's HC-110 diluted one part stock solution to 15 parts water. HC-110 seems to maximize Adox' capabilities to record detail in both shadows and highlights and produces the most satiny tones I've ever seen in a 35mm negative. No loss of either fine grain or resolving power was noted with HC-110 compared to results with D-76 mixed 1:1. The recommended times to start with at 70°F. for KB 14 should be seven to nine minutes; for KB 17, eight to 10 minutes, depending on subject contrast.

Kodak's Panatomic-X has the greatest exposure and development latitude of all the fine-grain films. My earlier experiences with Panatomic-X were first with straight D-76 as a developer and second with Microdol-X, neither of which seems to bring out the film's best qualities. I strongly recommend developing with HC-110, dilution B, to anyone who has had little developing experience or disappointing results with Panatomic-X.

When HC-110 was actively promoted by Kodak a few years ago, I took their claims with a grain of salt, especially regarding the preservation of shadow and highlight detail. My experience with Panatomic-X developed in HC-110, however, proved me wrong. Again, the manufacturer's recommendations for times and temperatures are the best points of departure. The only exception would be if there is difficulty due to the short developing time involved—if this happens, use half the stock solution required for dilution B and double the recommended times.

Matching the characteristics of a negative to the characteristics of an enlarging paper is even more a matter of personal taste. But you may want to try what I have found pleasing. It's hard to fault going the straight ticket and using Ilfobrome or Ilfospeed if your film choice is Ilford's Pan F. Kodabromide, or if you prefer the advantages of a resin-coated paper, Kodabrome RC, will perform well when exposed to a Panatomic-X negative developed in HC-110. For warmer tones, try using Uicolor RB resin-coated paper with a Panatomic-X, HC-110 negative. The negatives produced by the Adox films seem to work to best advantage when printed on a softer, long-scale paper such as Agfa's Brovira or Portriga Rapid for a warmer toned result.

It has been my experience that consistent, satisfying quality can be expected with all four of the film/developer combinations I've mentioned. Minor exposure and development mistakes do not turn out to be the disasters they could be with a faster film, especially if processing is extended to increase film speed—nor is the advantage only appreciable for the 35mm user. All the films are available in 120 size as well, and the advantages are as great—if not even more dramatic, particularly when making poster-size prints. □

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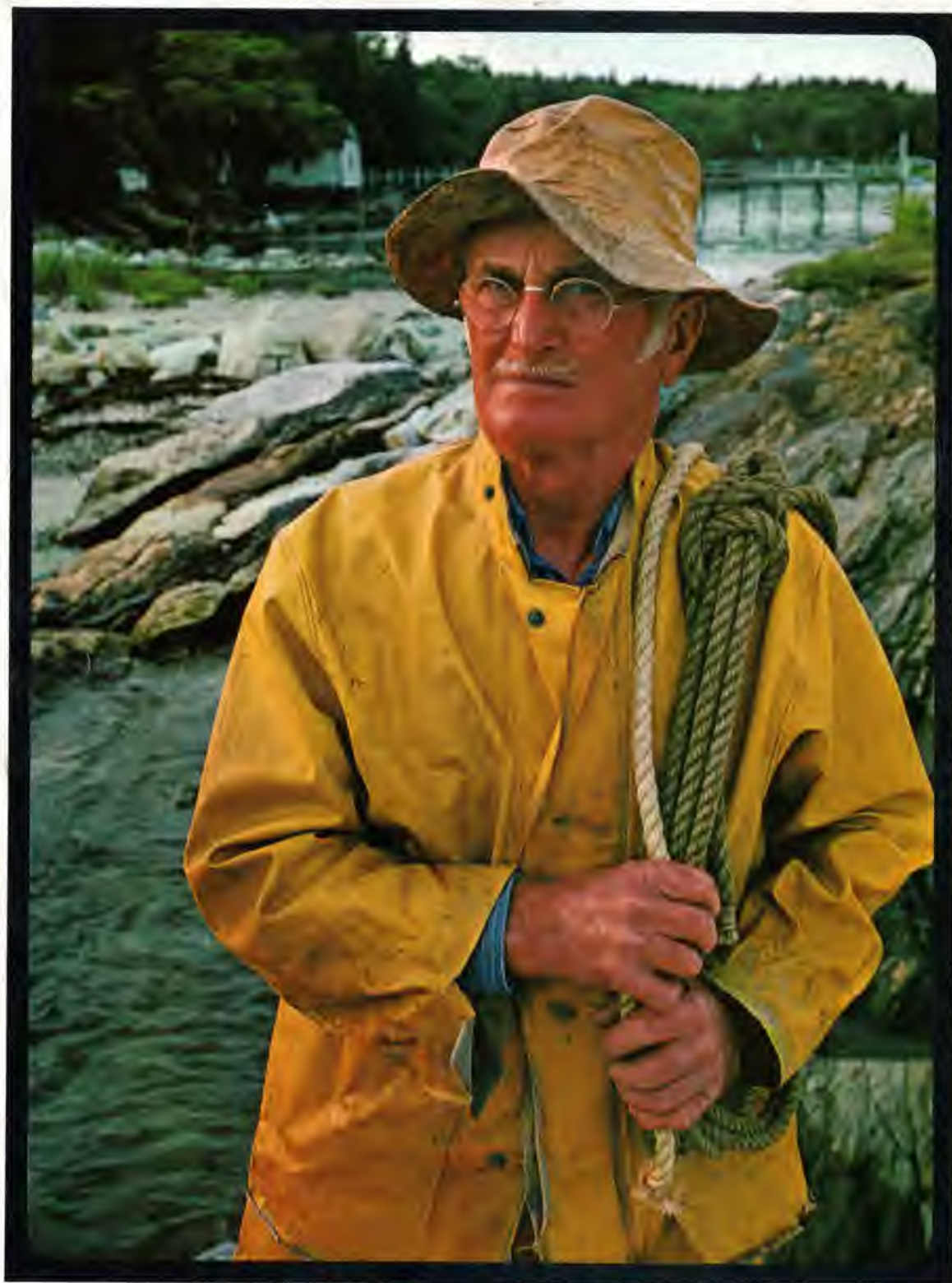


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